

# Exhibit 30

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

SECURITIES AND EXCHANGE )  
COMMISSION, )  
 )  
Plaintiff, )  
 ) Case No.  
v. ) 20-Civ-10832 (AT) (SN)  
 )  
RIPPLE LABS, INC., BRADLEY )  
GARLINGHOUSE, and CHRISTIAN )  
LARSEN, )  
 )  
Defendants. )  
\_\_\_\_\_ )

VIDEOTAPED DEPOSITION OF

CAROL L. OSLER, Ph.D.

Tuesday, December 21, 2021

Reported by:  
BRIDGET LOMBARDOZZI,  
CSR, RMR, CRR, CLR  
Job No. 211221BLO

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2 SOUTHERN DISTRICT OF NEW YORK  
3

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Defendants. )  
10 \_\_\_\_\_ )  
11  
12  
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14

15 Videotaped deposition of CAROL L. OSLER, Ph.D.  
16 taken on behalf of Plaintiff, held at the offices of  
17 Debevoise & Plimpton, 919 Third Avenue, New York, New  
18 York, commencing at 9:07 a.m. and ending at 6:14 p.m., on  
19 Tuesday, December 21, 2021, before Bridget Lombardozzi,  
20 CCR, RMR, CRR, CLR, and Notary Public of the States of  
21 New York and New Jersey, pursuant to notice.  
22  
23  
24  
25

A P P E A R A N C E S (Via Remote where indicated):

For the Plaintiff:

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DAVID SHERECK, Videographer  
Shereck Video Service

## INDEX

## WITNESS

## EXAMINATION

CAROL L. OSLER, Ph.D.

BY MR. MOYE

11

BY MR. OPPENHEIMER

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## EXHIBITS

## SEC

## NUMBER

## DESCRIPTION

## PAGE

Exhibit 1

Expert Report of Professor

14

Carol L. Osler 10-4-21

NO BATES, 41 pages

Exhibit 2

Federal Reserve Bank of St.

174

Louis - Functions of Money

article dated 8-9-12

NO BATES, 4 pages

Exhibit 3

NBER Working Paper Series

175

Yermack Article 12/13

NO BATES, 16 pages

Exhibit 5

Declaration of Lawrence

237

Angelilli dated 3-14-21

NO BATES, 13 pages

## EXHIBITS

SEC NUMBER	DESCRIPTION	PAGE
Exhibit 6	Rebuttal Report of [REDACTED] [REDACTED] dated 11-12-21 NO BATES, 73 pages	260
Exhibit 7	Amended Expert Rebuttal Report of [REDACTED] dated 11-16-21 NO BATES, 149 pages	263
Exhibit 8	Rebuttal Expert Report of Carol Osler dated 11-12-21 NO BATES, 20 pages	264
Exhibit 9	Expert Report of [REDACTED] [REDACTED] dated 10-4-21 NO BATES, 50 pages	296
Exhibit 10	"Free Working Capital with On-Demand Liquidity" NO BATES, 8 pages	223



## EXHIBITS

SEC NUMBER	DESCRIPTION	PAGE
Exhibit 11	"The Environmental Impact: Cryptocurrency Mining vs. Consensus" 7-8-20 NO BATES, 5 pages	232
Exhibit 12	11-18-21 CoinDesk Article "Mexican Crypto Exchange [REDACTED] Incorporates Circle Solutions for Cross-Border Payments Initiative." NO BATES, 3 pages	254
Exhibit 13	"MoneyGram Partners with Ripple Competitor Stellar" NO BATES, 4 pages	254

\*\*\* EXHIBITS BOUND SEPARATELY \*\*\*

## 1 DEPOSITION SUPPORT INDEX

## 3 DIRECTION TO WITNESS NOT TO ANSWER

4 Page Line

5 163 15

6 242 13

7 261 3

## 10 STIPULATIONS

11 Page Line

12 13 17

## 15 PORTION MARKED HIGHLY CONFIDENTIAL

16 Page Line

17 - -none- -

## 20 REQUEST FOR DOCUMENTS

21 Page Line

22 - -none- -

1                               -   -   -

2                               9:07 a.m.

3                               December 21, 2021

4                               -   -   -

5                               THE VIDEOGRAPHER:   Okay.   We  
6                               are on the record.   The time is  
7                               approximately 9:07 a.m.   Today's date  
8                               is Tuesday, December 21st, 2021.

9                               This is the video deposition of  
10                              Professor Carol Osler in the matter  
11                              of Securities and Exchange Commission  
12                              versus Ripple Labs, et al.   Index  
13                              number is 20-Civ-10832 in the United  
14                              States District Court, Southern  
15                              District of New York.

16                             My name is David Shereck,  
17                             certified legal videographer with Shereck  
18                             Video, in association with Gradillas  
19                             Court Reporting of Glendale, California.  
20                             We're located today at the office of  
21                             Debevoise & Plimpton located at 919 Third  
22                             Avenue, New York, New York.

23                             All counsels will be present --  
24                             all counsels present will be noted on the  
25                             stenographic record.

1 And the court reporter today is  
2 Bridget Lombardozzi, also with Gradillas.  
3 And will you please swear in the witness.

4 C A R O L O S L E R, Ph.D,  
5 having been duly sworn, was examined and  
6 testified as follows:

7 THE REPORTER: Thank you.

8 You may proceed.

9 MR. MOYE: Good morning.

10 Should we get the appearances from  
11 all of the witnesses -- from all the  
12 attorneys? No. We've already done  
13 that. All right.

14 DIRECT-EXAMINATION

15 BY MR. MOYE:

16 Q. I'm Robert Moyer representing the SEC  
17 I'll be asking you the questions today. Let's  
18 start out, can you tell me your name and spell it  
19 for the record?

20 A. Carol L. Osler. C-A-R-O-L, L,  
21 O-S-L-E-R.

22 Q. And where do you live?

23 A. I live in Framingham, Massachusetts.

24 Q. Have you ever been deposed before?

25 A. I have.

1 Q. How many times?

2 A. Twice.

3 Q. So this may be a review, but I want to  
4 go over a few points about how we can make a good  
5 record here today of your testimony.

6 The first thing I'd like to remind you  
7 is to please let me -- wait for me to finish my  
8 question before you begin your answer. I will try  
9 to do the same for your answers.

10 Second, from time to time counsel in the  
11 room may make an objection. When that happens, I  
12 have a choice: I can rephrase my question or I  
13 can ask you to go ahead and answer the pending  
14 question.

15 If you don't remember the pending  
16 question, we can have it read back.

17 Is that all right?

18 A. That's fine.

19 Q. Finally, if there's a question that you  
20 think is unclear, please ask me to clarify because  
21 if you go ahead and answer a question that I ask  
22 with the misunderstanding present, we may not know  
23 that that happens. However, if you realize later  
24 that you've misunderstood one of my questions and  
25 need to add to or change one of your answers, you

1 can do that, but please let me know that you want  
2 to do that so we can finish the pending question.

3 Is that all right?

4 A. Yes.

5 Q. And, finally, when I hand you a  
6 document, I will direct you to that portion of the  
7 document that I'm interested in. So you don't  
8 need to read the entire document before I can  
9 begin my question, but obviously if there are  
10 other parts of the document that you want to refer  
11 to before you begin your answer, that's fine as  
12 well. But I think it will go smoother if I give  
13 you an exhibit and tell you where I'm going to go.

14 Is that okay?

15 A. Yes.

16 Q. All right.

17 MR. OPPENHEIMER: Counsel,  
18 before you start, let me just put on  
19 the record our existing practice that  
20 an objection by one defendant is an  
21 objection by all.

22 MR. MOYE: Yes, that's  
23 acceptable.

24 MR. OPPENHEIMER: Thank you.

25 Q. And is it okay if I refer to you as

1 Professor Osler?

2 A. It is.

3 Q. All right. Professor, I'm going to hand  
4 you what's been marked as Exhibit 1.

5 A. Thank you.

6 (Whereupon, exhibit is received  
7 and marked SEC Osler Deposition Exhibit 1  
8 for identification.)

9 BY MR. MOYE:

10 Q. Can you let me know if you recognize  
11 Exhibit 1?

12 A. I do.

13 Q. What is Exhibit 1?

14 A. It is my expert report.

15 Q. Your initial report in this matter?

16 A. My initial report.

17 Q. Okay. That was issued on October 4th,  
18 more or less?

19 A. Yes, more or less.

20 Q. Okay. Does your initial report have any  
21 exhibits?

22 A. It does.

23 Q. Okay. So I'd like to direct your  
24 attention to Exhibit A.

25 Can you tell me in your own words, what

1 is Exhibit A? What kind of information it  
2 contains.

3 A. It's my curriculum vitae, so it has my  
4 education, my employment history, my publication  
5 history, my teaching and my thesis -- thesis  
6 committee participation and the like.

7 Q. Okay. So I'd like to review your  
8 academic experience. Can you tell me where you  
9 went to undergraduate?

10 A. I went to Swarthmore College in  
11 Pennsylvania.

12 Q. And you got a bachelor's in economics?

13 A. I did.

14 Q. When did that occur? When did you get  
15 that degree?

16 A. The degree was in 1980.

17 Q. Okay. May be an obvious question, but  
18 when you were studying in your undergraduate  
19 degree, did you study cryptocurrencies?

20 A. No, I didn't.

21 Q. All right. Where did you get -- where  
22 did you study for your master's degree?

23 A. My -- my master's and my Ph.D. came from  
24 Princeton University in New Jersey.

25 Q. Okay. And when did you receive your



1 master's?

2 A. My master's would have been, I believe,  
3 1983.

4 Q. Similar question as before: When you  
5 studied for your master's degree, did you have the  
6 occasion or opportunity to study cryptocurrencies?

7 A. I studied monetary theory but not  
8 cryptocurrencies.

9 Q. And that's because cryptocurrencies, as  
10 we know them now, didn't exist back then?

11 A. That's true.

12 Q. When did you receive your Ph.D.?

13 A. 1987.

14 Q. I'm sorry, '86 or '87?

15 A. '87.

16 Q. And when you were studying for your  
17 Ph.D., was it also true that cryptocurrencies did  
18 not exist and so you did not have the opportunity  
19 to study them?

20 A. That's correct.

21 MR. OPPENHEIMER: Objection  
22 to form.

23 Q. You can answer.

24 MR. OPPENHEIMER: You can  
25 answer.

1 A. That's correct.

2 Q. All right. You're teaching out at  
3 Brandeis University, correct?

4 A. Yes.

5 Q. I mean, not today.

6 A. Right.

7 Q. But you're employed at Brandeis?

8 A. I am employed at Brandeis.

9 Q. All right. Let's talk about some of  
10 your prior teaching experience.

11 You previously taught at Dartmouth  
12 College?

13 A. Yes.

14 Q. During what period of time?

15 A. From 1985 to 1991. I believe that was  
16 '91.

17 Q. At that time did you teach any courses  
18 that involved the use of cryptocurrencies in  
19 exchanges or foreign exchange trade?

20 THE REPORTER: In exchanges?

21 MR. MOYE: Or foreign  
22 exchange trade.

23 A. I certainly taught about the nature of  
24 money but I did not discuss cryptocurrencies.

25 Q. And, again, why not?

1 A. Because they did not exist.

2 Q. And you also taught at Northwestern  
3 University, is that true?

4 A. Yes, I did.

5 Q. During what period of time?

6 A. I taught as a visiting assistant  
7 professor in the -- around 1990 twice.

8 Q. In succession or -- or --

9 A. No, there was a gap between. About a  
10 semester, I believe.

11 Q. Okay. And so back in 1990, did you have  
12 the opportunity to teach any courses about the use  
13 of cryptocurrency in the foreign currency exchange  
14 markets?

15 A. I taught about currency trading  
16 extensively, which is my area of expertise. I did  
17 not specifically mention cryptocurrencies.

18 Q. And why not?

19 A. Because they didn't exist at the time.

20 Q. And when did you teach at Columbia?

21 A. I taught at Columbia in the early 1990s,  
22 shortly after I arrived at the Federal Reserve  
23 Bank of New York where I worked for about a decade  
24 as a macroeconomist -- for much of that period as  
25 a macroeconomist, international macroeconomist.

1 Q. All right. So you're talking about the  
2 Federal Reserve. How about at Columbia?

3 A. At Columbia I taught monetary theory to  
4 undergraduates and I taught something essentially  
5 the same to graduates in -- yeah.

6 Q. How long were you at Columbia?

7 A. I believe it was about -- I believe I  
8 taught there roughly three years.

9 Q. From '93 to '96? Does that sound right?

10 A. That sounds pretty good.

11 Q. It's listed in your professional  
12 experience with that. You're --

13 A. Okay.

14 Q. Feel free to refer to that if that helps  
15 you. If that doesn't help you --

16 A. Thank you. Okay.

17 Q. So I'm looking at the first page under  
18 "Professional Experience."

19 A. And I'm sure when I put that down, I had  
20 sat down to figure it out.

21 Q. Okay. That's what we're going to go  
22 with, '93 to '96.

23 So same question as I've asked you  
24 previously: Did cryptocurrencies exist back in  
25 1993 or 1996?

1 A. No, they didn't.

2 Q. Okay. So you would not have had the  
3 opportunity at Columbia to discuss or teach those  
4 topics to your students, is that right?

5 A. I certainly taught about currencies at  
6 great length.

7 Q. I was asking about cryptocurrencies.

8 A. I did not specifically mention  
9 cryptocurrencies. There are many currencies and I  
10 don't always mention them all. But in any case,  
11 at that time, cryptocurrencies did not exist.

12 Q. Okay. And you hadn't anticipated their  
13 existence, is that fair to say? You personally.

14 MR. OPPENHEIMER: Objection  
15 to form.

16 A. I'm just thinking about your question.  
17 You know, I don't even remember what I thought  
18 about back then. It's a very long time.

19 Q. All right. So you've been -- you've  
20 been at Brandeis University teaching for about the  
21 last 19 years. Is that -- is that close?

22 A. That's close.

23 Q. Okay. And according to your bio in  
24 Exhibit 1, you teach courses on behavioral  
25 finance, financial market structure and trading

1 process, and applied macroeconomic analysis, is  
2 that right?

3 A. Yes. And in macroeconomics, we discuss  
4 the nature of currencies and in my trading class,  
5 we discuss the trading of currencies.

6 Q. Okay. In any of the courses that you've  
7 been teaching at Brandeis, do you focus  
8 specifically on cryptocurrencies?

9 MR. OPPENHEIMER: Objection  
10 to form.

11 You can answer.

12 A. I -- let's see. Give me an opportunity  
13 to think about this.

14 I discussed it in my behavioral finance  
15 class. They came up as a topic along the way.

16 Q. So let's explore that for a minute.

17 When you say "discussed," is that the  
18 focus during the semester or was that something  
19 that came up on one day during one class  
20 discussion? How would you describe it?

21 MR. OPPENHEIMER: Objection  
22 to form.

23 You can answer.

24 A. I would describe it as a topic I raised  
25 on one day.

1 Q. Okay. And is it a topic that was the  
2 subject of research by your students leading to an  
3 assignment or an exam or was it -- was it  
4 something that you tested on or was it more --  
5 yeah. What did you do in connection with that  
6 discussion?

7 MR. OPPENHEIMER: Objection

8 --

9 Q. Was there any additional outside work or  
10 research?

11 MR. OPPENHEIMER: Objection

12 to form.

13 Q. You can answer.

14 A. I did not have the students do anything  
15 about it, but of course my understanding of  
16 cryptocurrencies is informed by my own research.

17 Q. Prior to Brandeis University, so I guess  
18 focusing mostly on Federal Reserve and your other  
19 teaching, has any of your professional employment  
20 focused on the use of cryptocurrencies either in  
21 connection with foreign exchange trading or in any  
22 other way?

23 A. No.

24 Q. In your research at Brandeis, according  
25 to your bio, your research is focused on exchange

1 rates and foreign exchange trade. I realize you  
2 do a lot of research.

3 But is that a fair summary of your --  
4 some of the topics of your research at Brandeis?

5 MR. OPPENHEIMER: Objection  
6 to form.

7 You can answer.

8 A. There has been an important secondary  
9 focus, which is on behavioral matters in finance.  
10 And most recently I have expanded my study of  
11 currency trading to include cryptocurrencies.

12 Q. So just looking at the past, maybe the  
13 more distant past instead of the present, would it  
14 be fair to say that your research at Brandeis has  
15 not focused on the use of cryptocurrencies in the  
16 foreign exchange trade market?

17 MR. OPPENHEIMER: Objection  
18 to form.

19 You can answer.

20 A. I'd say that my most recent research has  
21 definitely included cryptocurrencies.

22 Q. Let's flip that around.

23 Except for your most recent research,  
24 would it be fair to say that your other 18- or  
25 17-plus years at Brandeis has not focused on



1 cryptocurrencies in the foreign exchange trade  
2 trading markets?

3 A. That would --

4 MR. OPPENHEIMER: Objection.

5 You can answer.

6 A. That would be fair to say.

7 Q. Have you published any papers dealing  
8 with cryptocurrency trading?

9 A. I have not published any papers on it.

10 Q. Are you currently working on any papers  
11 either by yourself or with someone else regarding  
12 use of cryptocurrency?

13 A. Yes.

14 Q. Okay. Is that the "Private  
15 Non-fundamental Information in Adverse-Selection  
16 of Cryptocurrencies" paper?

17 A. Yes, it is.

18 Q. Okay. Who's your co-author?

19 A. Shuran Zhang.

20 Q. And who is Shuran Zhang?

21 A. He is a graduate of Brandeis Ph.D.  
22 program and I chaired his thesis committee.

23 Q. So he's a Ph.D. recipient?

24 A. Yes.

25 Q. He currently teaches at Brandeis?

1 A. Shuran Zhang? No.

2 Q. Okay. Where -- do you know where he is  
3 now?

4 A. Yes. He lives in Utah.

5 Q. Okay. Why don't we help the court  
6 reporter by spelling Shuran Zhang.

7 A. Sure.

8 Q. Do I have this right? S-H-U-R-A-N,  
9 Z-H-A-N-G?

10 A. Yes.

11 Q. All right. And thanks for helping with  
12 the pronunciation.

13 So you confirmed the title of the paper,  
14 but could you explain for noneconomists, what is  
15 the thesis of the paper? What is it that the  
16 paper's trying to establish or study?

17 MR. OPPENHEIMER: Objection  
18 to form.

19 You can answer.

20 A. The paper is interested in the  
21 communication of information within a given trade  
22 and the nature of that information. And I'm using  
23 cryptocurrency as a lens through which to  
24 understand all currencies. And so -- and, in  
25 fact, all trading. So all financial -- active

1 financial active trading.

2 So economists have -- financial  
3 economists. A major topic in the financial  
4 economics literature over the past 35 years has  
5 involved the question: What if someone in a given  
6 trading -- in a given trade knows more about the  
7 future value of a -- of the asset than -- than  
8 someone else? And we call that asymmetric  
9 information.

10 And the question is: What happens --  
11 and another important question is: What's the  
12 nature of that information? And my paper looks at  
13 the nature of information that might be  
14 communicated within a trade.

15 Q. What does the technical term "adverse  
16 selection" mean?

17 A. Let me think a bit so I can say it  
18 concisely for you.

19 Excuse me.

20 Adverse selection refers to a situation  
21 of asymmetric information, where one person knows  
22 more than another, and it refers to a situation in  
23 which the person who does not have the information  
24 will only experience an adverse outcome with  
25 respect to the person who does have the

1 information.

2 Q. So in connection with this paper, who  
3 has the adverse selection problem or the asymmetry  
4 of information with regard to cryptocurrencies?

5 MR. OPPENHEIMER: Objection  
6 to form.

7 You can answer.

8 Q. Just generally.

9 MR. OPPENHEIMER: Same  
10 objection.

11 A. Let me just formulate an answer for you.  
12 We -- the person purchasing.

13 Q. Okay. Do you view this recent research  
14 in any way as relevant to the expert opinion  
15 you've given in this case?

16 MR. OPPENHEIMER: Objection  
17 to form.

18 You can answer.

19 A. I will answer, but I just realized that  
20 I was too narrow in my previous response, so I'd  
21 like to clarify that after I answer.

22 Could you repeat the question, the  
23 current question?

24 MR. MOYE: Could you read it  
25 back?

1 (Whereupon, the record was read  
2 back.)

3 A. That's -- I -- I review the research as  
4 having helped enrich my understanding of  
5 cryptocurrencies broadly and the specific topic of  
6 the research is not directly relevant to this.

7 Q. Are you going to produce a copy of that  
8 paper?

9 MR. OPPENHEIMER: Can we --  
10 can we clarify that other answer she  
11 wanted to expand on?

12 THE WITNESS: Oh, yes.

13 MR. MOYE: Yes, right after  
14 she tells me.

15 Q. Are you willing to produce a copy of the  
16 paper so that we can study it?

17 A. Absolutely.

18 MR. OPPENHEIMER: Objection.

19 You can answer.

20 A. Okay. I believe it's available.

21 Q. Well, I haven't been able to get it.

22 A. Okay.

23 Q. So I'd appreciate it if your counsel  
24 could provide us a copy.

25 A. Okay. Okay.

1 Q. So why don't you go back and clarify the  
2 answer that you wanted to clarify.

3 A. Yes. So you had asked me who would be  
4 adversely selected in a currency trade or -- yeah,  
5 in a financial market trade. And I had specified  
6 that it was the purchaser. More accurately, it's  
7 the liquidity provider, whether the liquidity  
8 provider is buying or selling. It's whoever is  
9 providing liquidity on the trade.

10 Q. Are you saying the ultimate purchasers  
11 do not suffer in any way from the adverse  
12 selection problem?

13 MR. OPPENHEIMER: Objection  
14 to form.

15 A. I'm not sure I see the relationship  
16 between your question and what we've been talking  
17 about.

18 Q. That's fine. If you can't answer, we  
19 can move on.

20 MR. OPPENHEIMER: Objection.

21 A. Let me put it this way: Your question  
22 is confusing to me and I would welcome a  
23 clarification.

24 Q. Okay. I was trying to ask if the  
25 ultimate purchasers of cryptocurrency, the

1 individuals that purchase it, are they ever  
2 subject to the adverse selection problem which is  
3 the same or similar to what you described in this  
4 paper?

5 MR. OPPENHEIMER: Objection  
6 to form.

7 You can answer.

8 A. We're going an awfully long way here  
9 between what's in my paper and individual traders.  
10 So we'd have to examine the links carefully. And  
11 the paper is completely unspecific about who these  
12 traders are.

13 Q. Okay. So as of right now, you're not  
14 sure how you would answer my question.

15 Is that fair?

16 MR. OPPENHEIMER: Objection  
17 to the form.

18 You can answer if you  
19 understand that.

20 A. I -- I would like to clarify that until  
21 the question is clarified, I cannot provide an  
22 answer.

23 Q. All right. So if the paper was here, we  
24 might be able to do that, but why don't we move on  
25 to another area of discussion.

1 I'd like you to look at the list of your  
2 publications which is at the bottom of page 2 in  
3 your bio or your CV. And I believe it continues  
4 onto page 3 and 4.

5 So I'm mostly focused on recent  
6 publications, but obviously if you feel it's  
7 irrelevant, you can tell me.

8 A. Uh-huh.

9 Q. As far as you know, is this list of  
10 publications complete?

11 A. As far as I know.

12 Q. Okay. There's been nothing recent in  
13 the past month or so that didn't make it onto the  
14 CV?

15 A. No.

16 Q. Okay. So it looks like, looking at the  
17 bottom of page 2, you published an article in 2021  
18 titled "Price Discovery in Two-Tier Markets," is  
19 that right?

20 A. Yes.

21 Q. And then turning on to the next page, it  
22 looks like your next most recent publication, "The  
23 Market Microstructure Approach to Foreign  
24 Exchange," was published in 2013, is that correct?

25 A. That's correct.



1 Q. So between 2021 and 2013, were there any  
2 academic publications?

3 A. There were no academic publications.

4 Q. Now, I know that you've written several  
5 times for popular audience. Are those  
6 publications listed under your other publication  
7 section?

8 A. Yes.

9 Q. Okay. And you've also been part of  
10 several working papers, is that correct?

11 A. Yes.

12 Q. And those are listed in the "Working  
13 Papers" section on page 4, is that right?

14 A. Let me just check. There's some --  
15 there -- yeah, that's about right.

16 Q. Okay. So bottom of page 4, top of page  
17 5, shows what you've been working on but has not  
18 ultimately been published, is that fair?

19 A. That's correct.

20 Q. Okay. Is it -- is that section complete  
21 in terms of what you've been working on but not  
22 yet published?

23 MR. OPPENHEIMER: Objection  
24 to form.

25 A. In terms of working papers, that's

1 correct.

2 Q. All right. Would it be fair to say,  
3 Professor Osler, that between the period of 2013  
4 and the present, so 2021, you were focused on --  
5 you were more focused on expert engagements than  
6 in publishing your academic research?

7 MR. OPPENHEIMER: Objection  
8 to form.

9 A. No.

10 Q. No. Okay.  
11 Can you tell me how many academ -- how  
12 many expert engagements you've worked on between  
13 2013 and 2021?

14 A. I don't have the number handy, but it's  
15 important to know that I have been doing extensive  
16 administrative work at the university.

17 Q. Let's talk about that.

18 You have a lot of -- I don't know if  
19 they're management or supervisory  
20 responsibilities.

21 How would you describe your current load  
22 of responsibilities at Brandeis?

23 A. Quite extensive. I chair the faculty  
24 senate. And for about four years in there, I was  
25 co-chair of a task force intending to design

1 workplace bullying policies.

2 THE REPORTER: Workplace  
3 billing?

4 THE WITNESS: I'm sorry.  
5 Bullying.

6 THE REPORTER: Thank you.

7 BY THE REPORTER:

8 Q. And then, of course, you work with  
9 students, including Ph.D. students --

10 A. Uh-huh.

11 Q. -- and you serve on committees?

12 THE REPORTER: Repeat.

13 Q. Am I correct that you also work with  
14 students, including Ph.D. students, and you serve  
15 on their dissertation committees?

16 A. That's correct.

17 Q. Okay. Why don't we look at the expert  
18 section of your bio. So this is going to start at  
19 the bottom of page 1 and go onto the top of page  
20 2.

21 Would you take a moment to yourself,  
22 read through the case names, engagements that you  
23 worked on, and let me know when you're done.

24 A. I'm done.

25 Q. Okay. So by my count that's 11 expert

1 engagements. Math's not my main subject, so I  
2 could be off by one or two.

3 Does that sound about right?

4 A. Sounds about right.

5 Q. Okay. Are there others -- as you read  
6 through, did you notice any other expert  
7 engagements that you've worked on that are not  
8 listed here?

9 A. No.

10 Q. Do these engagements include matters on  
11 which you acted as a consultant but never actually  
12 offered an expert opinion?

13 A. Yes, they do.

14 Q. Okay. So we could be reasonably  
15 confident that if you worked in connection with  
16 any sort of litigation, it's listed in this  
17 engagement section. Is that fair?

18 A. Reason --

19 MR. OPPENHEIMER: Objection.

20 You can answer.

21 A. Reasonably confident.

22 Q. All right. And does this professional  
23 experience list any other matters in which you're  
24 currently acting as an expert or preparing to  
25 issue an expert opinion?

1           A.    Yes.  Well, I am not -- so, no, I am not  
2   preparing to provide an opinion -- no, there's  
3   one.  There's one that I am preparing to provide  
4   an opinion.

5           Q.    Which law firm are you working with?  
6   Can you tell us?

7           A.    Siskinds in Canada.

8           Q.    And what type of case is that?  Just a  
9   general is fine.

10                   MR. OPPENHEIMER:  Objection.

11                   You can answer.

12           A.    It's bonds.

13           Q.    Okay.  So besides the bond case with  
14   Siskinds and besides this case which is also not  
15   listed for obvious reasons, there's no other  
16   consulting engagement that -- that you have that  
17   you're working on.

18                   Is that fair?

19           A.    No.  There is a third that is -- let's  
20   see; listed here as 2017 to present, Maurice  
21   Blackburn in Australia.

22                   I speak with these people, yeah.  So  
23   there's that.

24                   I am not actively preparing anything for  
25   them at the moment.

1 Q. Okay. Besides the Ripple case which  
2 brings us here today, have any of these other  
3 expert engagements required you to issue an  
4 opinion regarding cryptocurrencies?

5 A. No.

6 Q. Did any of these expert or consulting  
7 engagements require you to look at or study  
8 cryptocurrency issues?

9 MR. OPPENHEIMER: Objection  
10 to form.

11 You can answer.

12 A. Not that I recall.

13 Q. How many times have you testified as an  
14 expert in court?

15 Let me rephrase that.

16 Have you testified as an expert in a  
17 court proceeding, in a trial or hearing?

18 MR. OPPENHEIMER: Objection  
19 to form.

20 You can answer.

21 A. No.

22 Q. Okay. How many times have you testified  
23 in a deposition prior to today?

24 A. Two.

25 Q. Okay. And which matters? Which expert

1 engagements were those?

2 A. Let's see. Chris Staines/Royal Bank of  
3 Canada and Axiom Investment Advisors, LLC versus  
4 Deutsche Bank.

5 Q. And in the Mancinelli case, did you give  
6 courtroom or deposition testimony?

7 A. The case had not proceeded that far.

8 Q. There was a published opinion which  
9 talks about your contributions to that case,  
10 whether or not you're aware of that. So I'm just  
11 asking about Mancinelli.

12 A. The bond case?

13 Q. This would be the one in Canada.

14 A. There's -- I've worked -- the Canadians  
15 like me.

16 Q. I'm glad to hear that. So I'm asking  
17 you about the Canadian case --

18 A. Mancinelli is about bonds and my bond  
19 report is not final.

20 Q. So if I ask you whether you issued three  
21 different written opinions in the Mancinelli case  
22 and that the court considered both those written  
23 opinions and written challenges to your case -- to  
24 your opinions by Nick Weir and another individual,  
25 would that refresh your recollection about whether

1 you have or have not given testimony in the  
2 Mancinelli case?

3 MR. OPPENHEIMER: Objection  
4 to form.

5 You can answer.

6 Q. If that's helpful.

7 MR. OPPENHEIMER: You can  
8 answer.

9 A. I wonder if there's a confusion  
10 somewhere in here on the specific names of the  
11 cases. What you describe I believe applies to the  
12 case -- the foreign exchange case that I dealt  
13 which is listed here as Chris Staines versus Royal  
14 Bank of Canada. So I believe that's where what  
15 you described occurred.

16 Q. Okay. All right. Thanks for that  
17 clarification.

18 Has a court ever considered whether to  
19 accept your opinion as an expert and either  
20 accepted it or rejected it?

21 MR. OPPENHEIMER: Objection  
22 to form.

23 You can answer.

24 A. I will need some clarification.

25 Q. Okay. So when experts' opinions are



1 submitted in litigation, the parties work with  
2 them. They study them. Sometimes there's  
3 depositions like today. But usually at a later  
4 point in a proceeding, the court has the  
5 opportunity to look at them if the case goes that  
6 far and doesn't settle or -- or be dismissed.

7 THE REPORTER: Or?

8 MR. MOYE: Or be dismissed.

9 Q. So I'm asking if you've ever -- if you  
10 know, whether any of your opinions have been ever  
11 submitted on summary judgment or accepted at a  
12 trial or a hearing where the court considered them  
13 on the merits?

14 MR. OPPENHEIMER: Objection

15 to form.

16 You can answer.

17 A. So -- so I think it would be helpful to  
18 outline the procedure in Canada. So in Canada  
19 where I have worked on -- I'm now working on my  
20 fourth case. The first thing -- what I have  
21 produced are documents describing a methodology  
22 for calculating damages, which is the first  
23 required step. And that has to go to a court and  
24 be accepted on the merits.

25 So in that sense, yes, they have been

1 presented to court and been accepted.

2 Q. So you believe they've been relied upon  
3 by a court in calculating damages?

4 MR. OPPENHEIMER: Objection  
5 to form; mischaracterizes testimony.

6 You can answer.

7 A. That mischaracterizes my testimony.

8 Q. Please -- please clarify.

9 A. Okay.

10 Q. What has the court done in Canada with  
11 your opinions as far as you know?

12 A. So when the methodology document is  
13 describe -- is presented and taken at -- as  
14 accepted, then the class action goes forward.

15 Q. So do you know if there's any court  
16 opinion, either in writing or given orally, where  
17 a court has said I looked at Professor Osler's  
18 methodology and I agree with it and we're going to  
19 use it in this case or I disagree with it, in  
20 whole or in part, and we're not going to accept  
21 all of it?

22 MR. OPPENHEIMER: Objection  
23 to form.

24 You can answer.

25 A. There was a document probably in the

1 foreign exchange Canada case where the judge had a  
2 paragraph about my statement that was interpreted  
3 by counsel as -- the judge was not speaking highly  
4 of the other side.

5 Q. And sitting here today, can you recall  
6 what case that was?

7 MR. OPPENHEIMER: Objection.

8 You can answer.

9 A. I couldn't be specific, no.

10 Q. All right. So we can set these expert  
11 engagements aside for now.

12 Do you have any personal experience  
13 which is relevant to the subjects on which you  
14 rendered expert opinions in this case?

15 MR. OPPENHEIMER: Objection  
16 to form.

17 You can answer.

18 A. That's very broad.

19 Q. All right. Let me clarify.

20 Do you have any personal experience in  
21 trading or investing in cryptocurrencies?

22 A. In cryptocurrencies? No.

23 Q. Have you ever paid for any good or  
24 service using cryptocurrencies?

25 A. No, I have not.

1 Q. Have you ever been paid for any good or  
2 service you provided using a cryptocurrency?

3 A. No.

4 Q. Would that include this engagement?

5 A. Yes.

6 Q. Okay. Fair to say for your professional  
7 services in this case, you've not been paid in XRP  
8 or any other cryptocurrency?

9 MR. OPPENHEIMER: Objection

10 to form.

11 You can answer.

12 A. My professional services are based on my  
13 expertise as an economist knowing about currencies  
14 and macroeconomics and the money supply process.  
15 And so there was no need for me to engage in such  
16 activities in order to prepare for this case.

17 Q. All right. I'm actually asking you a  
18 slightly different question.

19 When Ripple pays your bills or whoever  
20 law firm -- whichever entity pays your bills, do  
21 they pay you in U.S. dollars or in a  
22 cryptocurrency?

23 A. Counsel pays me in dollars.

24 Q. Okay. Do you have any personal  
25 experience in making cross-border currency

1 payments?

2 MR. OPPENHEIMER: Objection

3 to form.

4 You can answer.

5 A. No.

6 Q. Have you ever used MoneyGram?

7 A. I have not.

8 Q. Have you ever used [REDACTED]

9 A. I have not used [REDACTED]

10 Q. Have you ever used any other service  
11 that was intended to transfer money from the  
12 country where you were to a different country?

13 MR. OPPENHEIMER: Objection

14 to form.

15 You can answer.

16 A. So I'd like to answer that question and  
17 then put a clarification in about an earlier  
18 answer.

19 Q. Sure.

20 A. So I have not intended to simply  
21 transfer, as in make a gift, of money across  
22 borders. The -- the question have I ever paid for  
23 something internationally? That's -- I had said  
24 no, but I have bought things internationally  
25 online.

1 Q. Using different currencies?

2 A. Yeah.

3 Q. That -- that would involve a currency  
4 exchange?

5 A. Yes, that --

6 Q. Okay.

7 A. -- would involve a currency exchange.

8 Q. But as far as you know, did any of those  
9 foreign purchases that may have required the use  
10 of a different currency involve cryptocurrencies  
11 at any point?

12 A. Not as far as I know.

13 Q. Professor Osler, how did you prepare for  
14 your deposition today? What are the things you  
15 did?

16 MR. OPPENHEIMER: Objection.

17 You can answer. You should not  
18 reveal the substance of any  
19 communications you had with counsel.

20 A. Well, I was about to say I read and  
21 reread the -- the important documents, the -- the  
22 reports and the rebuttals. And I spoke with  
23 counsel.

24 Q. Okay. Which reports and rebuttals did  
25 you review?

1           A.    The report of myself and Mr. [REDACTED] and  
2   the rebuttals of Mr. [REDACTED] and Mr. [REDACTED]

3           Q.    Okay.  And --

4           A.    And my only rebuttal to Mr. [REDACTED]

5           Q.    Okay.  So let's spell [REDACTED] [REDACTED],  
6   is that right?  Is that right?

7           A.    Yes.

8           Q.    Okay.

9           A.    He's your expert, so...

10          Q.    Well, you responded to him, so I hope  
11   you looked at his name at least once.

12          A.    Yes, I did.

13          Q.    How often -- how many times did you meet  
14   with counsel?  Well, I guess that presumes  
15   something.

16                Did you meet in person or by video with  
17   counsel?

18                   MR. OPPENHEIMER:  You can  
19                   answer yes or no.

20          A.    Yes.

21          Q.    How many times?  And, again, this is in  
22   preparation for this deposition, not in connection  
23   with the issuance of your reports.

24          A.    We had four -- four -- basically four  
25   meetings.

1 Q. Okay. And approximately how long were  
2 these meetings, more or less?

3 A. I'd say, on average, they were about two  
4 hours.

5 Q. Okay. And aside from the ones you  
6 named, your own reports, [REDACTED] and [REDACTED] did  
7 you review any other expert reports in this  
8 matter?

9 MR. OPPENHEIMER: Objection  
10 to form.

11 You can answer.

12 A. No.

13 Q. In preparation for this deposition, did  
14 you review any other academic articles or  
15 documents from this case?

16 A. Please clarify "documents from this  
17 case."

18 Q. Yeah. Documents produced by Ripple to  
19 the SEC, discovery -- written discovery responses,  
20 briefs or submissions by the parties to the court.  
21 Anything -- anything that's not an expert report  
22 that's been produced in this case.

23 A. No.

24 Q. And did you review any other materials  
25 or publications in order to prepare -- that you



1 haven't already named in order to prepare for your  
2 deposition today?

3 MR. OPPENHEIMER: Objection  
4 to form.

5 You can answer.

6 A. I went online and gathered some more  
7 information.

8 Q. What were you looking for online?

9 MR. OPPENHEIMER: Objection  
10 to form.

11 You can answer.

12 A. I looked up recent daily trading in XRP.  
13 I -- and -- what else did I look up? Oh, no, I'm  
14 sitting here and it's, like, just not coming to  
15 mind. Things like that. Okay.

16 Q. As we dis -- as we go further, if you  
17 have occasion to recall, if you're prompted to  
18 recall things that you --

19 A. Uh-huh.

20 Q. -- did specifically to prepare for your  
21 deposition --

22 A. Uh-huh.

23 Q. -- any materials you looked at, will you  
24 please let me know and I'll give you a chance to  
25 explain?

1 A. Sure.

2 Q. Okay. So let's go back a little bit in  
3 time, so we're not talking about deposition prep.  
4 Let's talk about your work as an expert on this  
5 case.

6 When did you begin your work as an  
7 expert in this engagement?

8 A. I began my work in mid-August.

9 Q. Of 2021?

10 A. Yes.

11 Q. Okay. Approximately how long before --  
12 did you work before -- between the beginning and  
13 when your report was submitted? Was it about a  
14 month and a half?

15 MR. OPPENHEIMER: Objection  
16 to form.

17 You can answer.

18 A. Closer to two months, I believe.

19 Q. Okay. So is it possible you began  
20 working in early August if your report was  
21 submitted in -- on October 4th?

22 A. Yeah.

23 MR. OPPENHEIMER: Objection  
24 to form.

25 A. To be clear, I -- the engagement did not

1 begin until the beginning of August.

2 Q. Okay. Did you sign a contract or  
3 engagement letter?

4 A. I did.

5 Q. And was that with Ripple or with a law  
6 firm?

7 A. With counsel.

8 Q. Which law firm?

9 A. Kellogg Hansen.

10 Q. And I think you indicated before, is it  
11 Kellogg that's responsible for paying your fees?

12 A. Yes.

13 Q. Okay. Is Kellogg -- does Ripple also  
14 get a copy of your bills or do you not know?

15 A. I do not know.

16 Q. Your billing rate in this case is \$600  
17 per hour, is that right?

18 A. That's correct.

19 Q. Would that be the same for testimony as  
20 well as for your study and preparation?

21 A. Yes.

22 Q. And approximately how much have you been  
23 paid or received to date for your work on this  
24 case?

25 MR. OPPENHEIMER: Objection

1 to form.

2 You can answer.

3 A. Okay. I have received to date a little  
4 bit more than \$90,000.

5 Q. And how much else have you billed or  
6 incurred to date but not yet been paid?

7 MR. OPPENHEIMER: Objection  
8 to form.

9 You can answer.

10 A. I don't -- I don't know.

11 Q. Okay. Would it be \$90,000 or something  
12 less?

13 MR. OPPENHEIMER: Objection.

14 A. I -- I don't -- I just don't know.

15 Q. So it could be more than 90,000?

16 MR. OPPENHEIMER: Objection.

17 You can answer.

18 A. It could be.

19 Q. Okay. Let's try to break it down a  
20 little bit.

21 For what you've been paid so far, do you  
22 believe that included the work for your initial  
23 report?

24 A. It did.

25 Q. For what you've been paid so far, did it

1 include the work for your rebuttal report which  
2 was submitted in mid-November?

3 A. It did not.

4 Q. Okay. And so would it be fair to say  
5 that it could not have included the work -- any of  
6 the work you did to prepare for this deposition or  
7 to study other expert reports and rebuttals?

8 MR. OPPENHEIMER: Objection  
9 to form.

10 You can answer.

11 A. That's correct.

12 Q. Okay. So would you agree that there's a  
13 good chance that the work that you've done but not  
14 yet been paid for could be equal to or even exceed  
15 \$90,000?

16 MR. OPPENHEIMER: Objection  
17 to form.

18 You can answer.

19 A. I -- I -- I have not sat down to  
20 calculate this and so I couldn't tell you.

21 Q. All right. That's fine.

22 Did you work with anyone else in this  
23 engagement in preparing your report other than  
24 counsel?

25 A. No.

1 Q. Did you receive assistance from any  
2 other experts, students, employees, or  
3 contractors?

4 A. No.

5 Q. Do you know whether anyone besides you  
6 and counsel read your reports before you signed  
7 them and issued them?

8 A. Yes, I do know.

9 Q. Who else read your reports?

10 A. Excuse me. You asked me do I know and I  
11 said I do know. And what I know is that no one  
12 read it.

13 Q. Thank you. That's an important  
14 clarification. I apologize for that.

15 How do you know that no one else read  
16 your reports besides counsel?

17 A. They were on my laptop and no one has  
18 access to it.

19 Q. Okay. Did you send copies of your  
20 reports, for instance, to someone and they could  
21 have sent them to Ripple or to other experts or  
22 other lawyers working in this case?

23 A. No.

24 MR. OPPENHEIMER: Objection  
25 to form.

1 Q. All right. Before you began working in  
2 this case in August of 2021, were you familiar  
3 with either Ripple or with XRP?

4 MR. OPPENHEIMER: Objection.

5 You can answer.

6 A. No.

7 Q. As far as you remember, before you re --  
8 you were retained or were approached to be  
9 retained in this case, did you know anything about  
10 this litigation that the SEC's brought against  
11 Ripple?

12 A. I did not know.

13 Q. Prior to your retention by Kellogg, have  
14 you ever worked with any of the defendants'  
15 attorneys or law firms in this case?

16 A. I have not.

17 Q. So after -- after your retention as an  
18 expert but before you issued your initial report  
19 in early October, what documents did you review  
20 to -- to learn about or understand the claims that  
21 are at issue in this case? Did you read anything  
22 about the SEC's claims?

23 MR. OPPENHEIMER: Objection

24 to form.

25 You can answer.

1           A.    The documents that I reviewed and that I  
2   relied on in creating my report are listed in the  
3   report.  And so the ones that come to mind  
4   immediately are white papers describing the -- the  
5   voting protocol for solving the Byzantine Generals  
6   Problem, some Ripple documents online.  If you --  
7   yeah.  They're listed in the report and, you know,  
8   the list goes on, so we could look at it.

9           Q.    Did you read the amended complaint, the  
10   SEC's amended complaint?

11          A.    Yes.  Yes, I did.  I did.

12          Q.    Okay.  Did you read any of the SEC's  
13   discovery responses in this case?

14          A.    No.

15          Q.    Did you read any of the defendants'  
16   discovery responses in this case?

17          A.    No.

18          Q.    Did you read any deposition transcripts  
19   or testimony?

20          A.    No.

21          Q.    Did you have any discussions, either in  
22   person or online, with Ripple employees or  
23   attorneys retained directly by the company?

24                   MR. OPPENHEIMER:  Objection

25                   to form.



1 MR. MOYE: Let me clarify.

2 Q. Did you have any discussions, either in  
3 person or by telephone or online, with employees  
4 of Ripple or attorneys who work for the company  
5 Ripple at Ripple?

6 MR. OPPENHEIMER: Objection  
7 to form.

8 You can answer yes or no if you  
9 know.

10 A. No.

11 Q. Did you read any draft reports of other  
12 experts before you finalized your own?

13 A. No.

14 Q. Did you discuss with any other expert  
15 retained by the defendants the subject of their  
16 reports before you issued your own?

17 A. No.

18 Q. And aside from those things that are  
19 footnoted and mentioned in your own initial  
20 report, did you read any other written narratives  
21 or descriptions about Ripple, the company, or  
22 about XRP?

23 A. The documents that were --

24 MR. OPPENHEIMER: Objection  
25 to form.

1                   You can answer.

2           A.    The documents that were critical to  
3   forming my opinions are all listed.

4           Q.    Okay.  Your report uses the phrase  
5   "considered or relied upon," so I'd like to  
6   explore that a minute.

7                   Would it be fair to say, then, that your  
8   report may not, in fact, list certain documents or  
9   materials that you looked at before you finished  
10   your report in this case?

11                   MR. OPPENHEIMER:  Objection.

12                   You can answer.

13           A.    I did not include everything I looked  
14   at.  I included those that were critical in  
15   forming my opinion.

16           Q.    Okay.  So when you use the phrase in  
17   your report "considered or relied upon," is the  
18   definition that you just gave how we should  
19   understand that phrase, that they were critical in  
20   your opinion?

21                   MR. OPPENHEIMER:  Objection  
22                   to form.

23                   You can answer.

24           A.    Yes.

25           Q.    All right.  Let's turn to the beginning

1 of Exhibit 1.

2 A. Excuse me. I'd like to clarify.

3 Q. Sure.

4 A. So the documents that were critical are  
5 listed. Some documents are listed simply to  
6 illustrate principles and to provide a source for  
7 anyone who would like a source to illustrate  
8 general acceptance of a point or -- or whatever.

9 So the documents that are critical are  
10 included and there are some other documents as  
11 well.

12 Q. Okay. Thanks for that clarification.

13 I was also interested to know, are there  
14 materials that you looked at and perhaps thought  
15 that they were not essential to your report that  
16 are not footnoted here?

17 MR. OPPENHEIMER: Objection  
18 to form.

19 You can answer.

20 Q. Let me try this.

21 You may have at documents that helped  
22 you in some way to understand some of the things  
23 you discussed, but if they weren't critical, you  
24 didn't necessarily list them all.

25 Is that fair?

1 A. That's --

2 MR. OPPENHEIMER: Objection.

3 You can answer.

4 A. Correct.

5 Q. All right. So from time to time we may  
6 discuss parts of your report and I may ask you  
7 what's the source for this or were there any other  
8 documents you looked at? And at that point, that  
9 would be a good time where we could discuss those  
10 if you -- if you remember them. Okay?

11 A. Sure.

12 Q. Okay. So I'd like to ask you about  
13 the -- the two questions that you were asked to  
14 consider and answer in your report. And if -- if  
15 it helps you to look at page 3, that describes  
16 your expert assignment and opinions, feel free to  
17 do that.

18 What were the two questions that you  
19 were asked to consider in answering your initial  
20 expert report?

21 A. "Question 1: From an economic  
22 perspective, does the digital asset XRP function  
23 as a 'currency'?"

24 "Question 2: Does Ripple's On-Demand  
25 Liquidity product present an economically sound

1 option for making cross-border and cross-currency  
2 payments? Why or why not?"

3 Q. Do you have any understanding that you  
4 can share with us about why these questions might  
5 be relevant to the outcome of this case?

6 MR. OPPENHEIMER: Objection  
7 to form; calls for legal conclusions  
8 and potentially conversations with  
9 counsel.

10 I instruct you not to discuss  
11 the substance of any communications with  
12 counsel. Beyond that, you can answer if  
13 you have an understanding.

14 A. It's a legal matter and counsel's been  
15 very circumspect with that. So my understanding  
16 is limited and incomplete.

17 Q. So without revealing any conversations  
18 you had with counsel, are you really unable to  
19 explain how you think your opinion might or might  
20 not be useful to the -- to the court in deciding  
21 this case?

22 MR. OPPENHEIMER: Objection  
23 to form. Argumentative and calls for  
24 speculation.

25 You can answer if you -- if you

1 know.

2 A. The case -- I know that the case  
3 involves me -- the -- trying to define the nature  
4 of XRP and so I was asked questions relative to  
5 that definition, that -- that characterization.

6 Q. As you sit here today, and without  
7 revealing anything specifically that counsel might  
8 have told you, do you believe that the court is  
9 required to decide whether XRP, in fact, functions  
10 as a security in order to decide this case?

11 MR. OPPENHEIMER: Objection  
12 to form; calls for a legal  
13 conclusion.

14 You can answer.

15 A. I don't have a belief one way or the  
16 other.

17 Q. Okay. As you sit here today and without  
18 revealing anything that you've heard directly from  
19 counsel, do you believe the court is required to  
20 decide whether ODL, Ripple's On-Demand Liquidity  
21 product, was an economically sound option for  
22 cross-border currency payments?

23 MR. OPPENHEIMER: Objection  
24 to form.

25 A. It's a legal matter. I don't have an

1 opinion one way or the other.

2 Q. Okay. Do you have any understanding as  
3 to why you were a logical person to offer opinion  
4 evidence on the two questions that you've -- that  
5 you've just described?

6 MR. OPPENHEIMER: Objection  
7 to form.

8 A. Excuse me for a moment.

9 I understand it, but it was attorney  
10 privileged communication.

11 Q. Okay. We'll see if we can answer this  
12 question without revealing attorney work product.

13 Do you believe you were retained in this  
14 matter because of your prior experience with  
15 currencies and foreign currency exchange?

16 MR. OPPENHEIMER: Objection  
17 to form.

18 You should not reveal any  
19 substance of privileged communication  
20 that you had with counsel in answering  
21 this question. If you have a  
22 nonprivileged basis, you can give it,  
23 though I -- I stand by the form objection  
24 there as well. You can answer.

25 BY MR. MOYE:

1 Q. You can answer yes or no if that's --  
2 that's a good way to limit your answer.

3 A. I -- I -- my belief is based on attorney  
4 privileged information.

5 Q. Okay. Maybe we can answer this  
6 question.

7 Do you believe you were retained as an  
8 expert in this case to offer opinions because of  
9 some extensive background that you had in  
10 cryptocurrencies generally?

11 MR. OPPENHEIMER: Objection  
12 to form.

13 Same general instruction.

14 A. My understanding of the reason why I --  
15 my services were solicited is based on attorney  
16 privileged information.

17 Q. Okay. Let's answer this: Are you aware  
18 of other academics that have published research on  
19 cryptocurrencies?

20 A. They exist.

21 Q. Do you know whether any other academics  
22 have considered and published research or opinions  
23 about whether cryptocurrencies should be  
24 considered currency or money?

25 A. I am aware that that exists.



1 Q. Okay. Have you ever read any of those  
2 articles -- have you ever read any academic  
3 articles or publications on discussing whether  
4 certain cryptocurrencies should be considered  
5 money or currency?

6 A. I have not.

7 Q. And did you consider, in preparing  
8 either your initial or rebuttal report, about  
9 whether it might be helpful to you to read such  
10 publications?

11 MR. OPPENHEIMER: Objection  
12 to form.

13 You can answer.

14 A. As an expert in macro academics and  
15 monetary economics and currency trading and  
16 someone who has taught central banking, I had more  
17 than sufficient knowledge, in my view, to arrive  
18 at my own opinion, which is what counsel  
19 requested.

20 Q. Prior to --

21 MR. OPPENHEIMER: Move to --  
22 move to strike the reference to what  
23 counsel requested there. Go ahead.

24 Q. Prior to beginning -- prior to your  
25 retention in this case and prior to beginning work

1 in this case, did you have opinions about whether  
2 cryptocurrencies should be considered currency or  
3 money for some or for all purpose?

4 A. I have --

5 MR. OPPENHEIMER: Objection  
6 to form.

7 You can answer.

8 A. No.

9 Q. Okay.

10 MR. MOYE: Why don't we take  
11 a short break.

12 MS. JONES: Sure.

13 MR. MOYE: Ten minutes or  
14 less.

15 MR. OPPENHEIMER: Okay.

16 THE VIDEOGRAPHER: Going off  
17 the record at 10:06.

18 (Whereupon, a recess is taken.)

19 THE VIDEOGRAPHER: Okay.

20 Back on the record at 10:21.

21 BY MR. MOYE:

22 Q. Professor Osler, we've been talking for  
23 some time using the term "cryptocurrency." But I  
24 realized I neglected to ask you what your working  
25 definition or understanding of a cryptocurrency

1 is. So let me ask you that now so we can make  
2 sure that we're on the same page.

3 Can you tell us what your basic  
4 understanding of a cryptocurrency is?

5 MR. OPPENHEIMER: Objection  
6 to form.

7 A. It's complicated, so I need -- you know,  
8 I was not asked to opine on that and I have never  
9 formulated a -- a formal definition in my head.

10 Q. Okay. So without any sort of  
11 prejudice -- I'm not going to say "gotcha" --  
12 you've done some prior work on that working paper  
13 involving cryptocurrencies.

14 A. Uh-huh.

15 Q. What's sort of your general  
16 understanding of what people mean when they use  
17 the term "cryptocurrency" even if you're not being  
18 precise?

19 MR. OPPENHEIMER: Objection  
20 to form.

21 You can answer.

22 A. Generally, cryptocurrencies are -- I can  
23 give you some properties of them. They're traded  
24 on a -- a distributed ledger that is avail -- you  
25 know, out in cyberspace, so it does not have a

1 sort of earth-bound location.

2 They have no future cash flows, which is  
3 something that I highlight in my paper on the  
4 subject.

5 Q. What do you mean --

6 A. Those are two properties that come to  
7 mind.

8 Q. Okay. What do you mean when you say  
9 "they have no future cash flows"?

10 A. There is no interest paid generally.  
11 These days we're moving into new spaces, but  
12 there's no interest. There's no dividends.  
13 That's the sense of cash flows that I mean  
14 specifically.

15 Q. Okay. Do you have an understanding,  
16 general or specific, about the term "digital  
17 asset"?

18 MR. OPPENHEIMER: Objection  
19 to form.

20 A. I have not thought about precisely what  
21 a digital asset is.

22 Q. Okay. Do you have an understanding  
23 about the nature or definition of a convertible  
24 cryptocurrency?

25 MR. OPPENHEIMER: Objection;

1 form.

2 A. No.

3 Q. Okay. I know your report discusses  
4 features or attributes of currency, but I wasn't  
5 sure if there was an actual definition in your  
6 report of what you mean when you use the term  
7 "currency."

8 Can you explain in layman's terms, if  
9 possible, what you mean when you use the term  
10 "currency" in your report?

11 MR. OPPENHEIMER: Objection.

12 You can answer.

13 A. You're correct that I do not provide a  
14 definition. I was asked whether -- Question 1  
15 asks whether XRP functions as -- has the functions  
16 of a currency. And I highlight that it has the  
17 functions and the attributes normally frequently  
18 associated with a currency.

19 Q. But you do use the term "currency," in  
20 quotes, right at the top of page 3. So I was  
21 curious as to what your definition, either  
22 specific or general, was of a currency.

23 MR. OPPENHEIMER: Objection

24 to form.

25 Q. Can you answer?

1           A.    My opinion does not include a definition  
2   of a currency.  And I address the functions of a  
3   currency.  I do not provide a definition.

4           Q.    But you -- you have an understanding of  
5   what a currency is.

6                    Could you share that with us, please?

7                           MR. OPPENHEIMER:  Objection.

8                           You can answer.

9           A.    It's a very complicated matter.  There's  
10   mountains of research of the exact nature of money  
11   and currency, and so my understanding is very rich  
12   and complex and any quick summary would not do it  
13   justice.

14          Q.    So did you mean to leave currency as an  
15   undefined term in Question 1 of your expert  
16   report?

17                   MR. OPPENHEIMER:  Objection.

18                   You can answer.

19          A.    I was asked whether -- my report  
20   addresses the question that was posed to me, which  
21   is whether XRP functions as -- has the functions  
22   of a currency.  So I addressed that question.

23          Q.    What did Ripple mean or the -- the  
24   lawyers who asked you this question as best you  
25   can tell us?  What did -- what did counsel mean

1 when they asked you to -- whether Ripple functions  
2 as a currency? What are we to understand from  
3 your use of that word in your opinion?

4 MR. OPPENHEIMER: Objection.

5 I instruct you not to disclose  
6 the substance of communication with  
7 counsel. To the extent you understand  
8 and have an answer to that question  
9 without revealing privileged  
10 communications, you can give it.

11 A. So my understanding of the functions of  
12 a currency as characterized in the academic  
13 literature, as specified in the question here, the  
14 literature has -- the literature has a rich  
15 discussion of these functions, not always labeled  
16 as such, but these functions, what it does. And  
17 so I drew on the consensus or the -- my  
18 understanding of the consensus of the academic  
19 literature on the functions.

20 Q. Were you asked whether Ripple met  
21 the legal -- sorry.

22 Were you asked whether XRP met the legal  
23 definition of a currency?

24 MR. OPPENHEIMER: Objection.

25 A. I -- that would be attorney privileged

1 information.

2 Q. Well, I don't believe you hired him as  
3 your counsel, right? So we're talking about work  
4 product. I understand the general sense that you  
5 don't feel like it's appropriate to answer that.

6 But I'm asking you, did you think you  
7 needed to opine on whether XRP functioned in a way  
8 that met a specific legal definition of the term  
9 "currency"?

10 MR. OPPENHEIMER: Objection

11 to form. Hang on a second.

12 If you have an answer to that  
13 question that does not require you to  
14 draw on privileged communications with  
15 counsel, you can give it. If your answer  
16 would disclose the substance of attorney  
17 work product conveyed to you in  
18 communications with counsel, you should  
19 not respond.

20 A. I cannot answer that question.

21 Q. Okay. I understand what you just said.  
22 I want to just clarify for the record.

23 So you're telling -- your -- your  
24 testimony is that you cannot explain what you were  
25 trying to -- what definition of currency you were



1 working with without revealing your conversations  
2 with counsel. Is that fair?

3 MR. OPPENHEIMER: Objection  
4 to form; mischaracterizes testimony.

5 You can answer.

6 A. That would -- that's inaccurate and it  
7 misrepresents my testimony so far. What I have  
8 said is that I looked at the functions of a  
9 currency. I have not said that I looked at  
10 definitions of a currency.

11 Q. Okay. All I'm trying to establish is  
12 whether you can explain what definition of  
13 currency you are working with for purposes of this  
14 expert report.

15 Can you do that?

16 MR. OPPENHEIMER: Objection;  
17 asked and answered.

18 You can answer again.

19 A. I have clarified that I worked with the  
20 functions of a currency.

21 Q. Would it be fair to say that for  
22 purposes of your report, currency is undefined  
23 except as you explain its functions?

24 MR. OPPENHEIMER: Objection.

25 You can answer.

1           A.    It would -- the report lists the  
2           functions and attributes.  The functions that  
3           are -- and attributes that are -- the functions  
4           that are a consensus within overall academics  
5           associated with currencies and the attributes that  
6           are considered helpful in currency.

7           Q.    Okay.  Are you saying that for this  
8           purpose, currency can be defined by its function?  
9           Is that fair?

10                       MR. OPPENHEIMER:  Objection.

11                       You can answer.

12           A.    No.

13           Q.    Okay.  I'm ready to move on, but I just  
14           want to give you the chance to -- to tell us, if  
15           you can, what definition of currency you were  
16           trying to evaluate XRP against when you began this  
17           work.

18                       MR. OPPENHEIMER:  Objection;

19                       asked and answered.

20                       You can answer again.

21           A.    I was looking at the consensus on the  
22           functions of a currency as specified and I also  
23           looked at helpful attributes of currencies.

24           Q.    All right.  Let's look at Exhibit 1,  
25           page 4.

1 A. Okay. Page 4?

2 Q. Yes, page 4.

3 A. There's no Exhibit.

4 Q. Exhibit 1, page --

5 A. Oh, Exhibit 1, page 4.

6 Q. Yeah, Exhibit 1, page 4. I'm sorry.

7 So I'm looking at your report, Section

8 III.

9 Can you read the -- the heading for

10 Section III out loud?

11 A. "Opinion on Question 1: XRP has the  
12 functions and attributes commonly assigned to  
13 currencies by experts."

14 Q. Okay. Which experts were you referring  
15 to in the following section, Section III?

16 A. I was referring to the consensus among  
17 academics with no specific reference to  
18 individuals.

19 Q. Okay. Are there any individuals that  
20 you think are representative of the consensus  
21 among academics?

22 MR. OPPENHEIMER: Objection.

23 A. I couldn't specify one.

24 Q. Okay. So it's -- with the exception of  
25 the individuals that are cited in the footnotes,

1       there aren't any other experts that you're  
2       prepared to say fit into the category of the  
3       heading. Is that okay?

4                       MR. OPPENHEIMER: Objection  
5                       to --

6       Q. Is that correct?

7                       MR. OPPENHEIMER: Objection  
8                       to form.

9       Q. Let me take that back. Let me ask you a  
10      different question.

11                      Do you believe that the individuals that  
12      are cited in the footnotes of Section III qualify  
13      in some degree or another as experts and that they  
14      fit this consensus group you're describing?

15                      MR. OPPENHEIMER: Objection  
16                      to form.

17       A. I think that question has got a lot  
18      going on in there and it would be important to  
19      break it down.

20       Q. Okay. Do you know any other expert that  
21      has -- that uses the same definition, whether  
22      functional or otherwise, for currency as you do?

23                      MR. OPPENHEIMER: Objection  
24                      to form.

25                      You can answer.

1           A.    My answer is the synthesis of what's in  
2   the academic literature as I have read it over  
3   many years and in many contexts.  And I did not  
4   rescan those documents to identify which academic  
5   exactly -- whether any specific academic exactly  
6   fits what I have listed here.

7           Q.    Okay.  Second sentence of Section III,  
8   paragraph 8, you say "It is commonly assumed that  
9   all currencies are state-sponsored," and then your  
10   sentence goes on.

11                  Do you see that?

12           A.    Yes.

13           Q.    Who are you referring to when you say  
14   "it is commonly assumed"?

15           A.    Historical discourse.

16           Q.    Okay.  Are you referring to experts or  
17   lay people?

18                          MR. OPPENHEIMER:  Objection.

19                          You can answer.

20           A.    Lay people primarily.  Yeah.

21           Q.    And then you go on to say "state  
22   sponsorship is neither necessary nor sufficient  
23   for legitimate currencies."

24                  Do you see that?

25           A.    I do.

1           Q.    Okay.  What is your source for your  
2   assertion that state sponsorship is not --  
3   "neither necessary nor sufficient for legitimate  
4   currencies"?

5           A.    I list quite a few sources in the notes  
6   to that paragraph.  Kusimba in 2017, an  
7   anthropologist of high standing, highlights an  
8   extensive anthropological literature that  
9   discusses money that existed before states spons  
10  -- states even existed, for example.

11                   So there are other citations there.

12           Q.    Is Kusimba an economist?

13           A.    No.  Kusimba is an expert in money, in  
14  anthropology.

15           Q.    Okay.  Are the experts that you refer to  
16  as having the attributes commonly assigned to  
17  money, are they economists or are they  
18  anthropologists?

19                   MR. OPPENHEIMER:  Objection  
20                   to form.

21           A.    The experts I have in mind are -- come  
22  from both areas.

23           Q.    Do the experts you refer to include  
24  government officials?

25                   MR. OPPENHEIMER:  Objection.

1                   You can answer if you know.

2           A.    Some of them might be.

3           Q.    Okay.

4           A.    Yeah, absolutely.

5           Q.    In paragraph 2, which is the first  
6 Kusimba reference in your -- Footnote 2, sorry --

7           A.    Uh-huh.

8           Q.    -- which is the first Kusimba reference  
9 in your report, what type of publication is The  
10 Conversation?

11          A.    The Conversation is a synthesis of  
12 academic work for what I call the educated  
13 layperson.

14          Q.    Okay. Is it an academic -- is it a  
15 peer-reviewed academic publication?

16          A.    It is not a peer-reviewed academic  
17 publication.

18          Q.    Okay.

19          A.    It is a synthesis of the research in  
20 peer-reviewed academic publications. That is the  
21 purpose of The Conversation.

22          Q.    So it's by academics. Is that fair?

23          A.    It is by academics and it is generally  
24 about academic research.

25          Q.    Okay. Is it intended for an academic

1 audience or for a popular audience?

2 A. It's intended to bring academic insights  
3 in published papers to a popular audience.

4 Q. Are you familiar with The State Theory  
5 of Money?

6 A. No.

7 MR. OPPENHEIMER: Objection.

8 You can answer.

9 Q. Have you heard of George Knapp,  
10 K-N-A-P-P?

11 A. Not to my recollection.

12 Q. Have you heard of Abbe, A-B-B-E, Lerner,  
13 L-E-R-N-E-R?

14 A. There's a Lerner that I'm familiar with  
15 and I don't recall this individ -- although I have  
16 read at different points, I don't recall that  
17 person's first name.

18 Q. Are you aware that certain economists  
19 believe that legal tender is central to the status  
20 of money?

21 MR. OPPENHEIMER: Objection

22 to form.

23 You can answer.

24 A. No.

25 Q. Have you ever read an academic article



1 about money or currency that suggested that state  
2 sponsorship was an important aspect of money?

3 MR. OPPENHEIMER: Objection.

4 You can answer.

5 A. I've read so much over the years it  
6 would be unable -- I'd be unable to say.

7 Q. As you sit here today, do you believe  
8 there are economists that posit that state  
9 sponsorship is an important aspect of money?

10 MR. OPPENHEIMER: Objection.

11 A. As I've articulated, the discussion of  
12 money --

13 THE REPORTER: I'm sorry.

14 Repeat. As a?

15 A. As I have articulated, the discussion of  
16 money among economists goes back centuries and  
17 there are many varied opinions.

18 Q. Would some of those opinions include the  
19 fact that state sponsorship is an important  
20 attribute of money?

21 MR. OPPENHEIMER: Objection

22 to form.

23 A. There might be, but it -- that opinion,  
24 like many others, violates the fact that money has  
25 existed since well before states existed.

1 Q. Are you familiar with the spontaneous or  
2 emergent theory of money?

3 MR. OPPENHEIMER: Objection  
4 to form.

5 A. I couldn't put that name on it, but I  
6 believe I'm familiar with that theory.

7 Q. Okay. Are you familiar -- familiar with  
8 that concept by the name of societary theory of  
9 money?

10 MR. OPPENHEIMER: Objection  
11 to form.

12 A. The particular name? No. But I  
13 under -- I believe I understand the concept.

14 Q. Okay. According to the spontaneous or  
15 emergent theory of money, however you understand  
16 it, do you believe that the universal acceptance  
17 as a medium of exchange is the most important  
18 criteria for money?

19 MR. OPPENHEIMER: Objection  
20 to form.

21 You can answer.

22 A. Universal acceptance has never been  
23 achieved by money anywhere at any time.

24 Q. Are you familiar with an economist named  
25 Carl Menger, M-E-N-G-E-R?

1           A.    The name has crossed my path, yes.

2           Q.    Have you ever read anything by Carl  
3 Menger as far as you know?

4           A.    Probably.

5           Q.    Okay. Are you familiar with an  
6 economist named Friedrich, F-R-I-E-D-R-I-C-H,  
7 Hayek, H-A-Y-E-K?

8           A.    Yes.

9           Q.    Do you believe either of these two  
10 individuals have championed or promoted the  
11 spontaneous or emergent theory of money?

12                       MR. OPPENHEIMER: Objection  
13 to form.

14           A.    I couldn't say.

15           Q.    Okay. Would you agree with me that  
16 among economists in particular, there are a  
17 variety of views about what makes an asset money  
18 and whether an asset functions well as money?

19                       MR. OPPENHEIMER: Objection.

20           A.    As I had said, the subject is quite rich  
21 and the debate/discussion has been going on for  
22 centuries now. So within anybody of econ -- of  
23 academics, there will be debates.

24           Q.    Okay. Do you think in these debates,  
25 there's a divergence of views about the attributes

1 of money or whether state sponsorship should be  
2 considered as an attribute of money?

3 MR. OPPENHEIMER: Objection.

4 You can answer.

5 A. As I have said, my job was to convey the  
6 broad understanding or the consensus understanding  
7 of the field and I believe I have conveyed the  
8 broader consensus understanding among academics,  
9 including experts with knowledge that is not  
10 widely shared among economists on the history of  
11 money.

12 Q. So when you say "state sponsorship is  
13 neither necessary nor sufficient for legitimate  
14 currencies," are you saying -- are you describing  
15 a consensus rather than a view universally held by  
16 economists?

17 MR. OPPENHEIMER: Objection

18 to form.

19 A. I'm describing a consensus.

20 Q. Do you mean to suggest that there are no  
21 economists that believe that state sponsorship is  
22 an important aspect of money?

23 MR. OPPENHEIMER: Objection

24 to form.

25 A. Your question mistakenly conflates

1 consensus with unanimity. So the answer is no.

2 Q. Okay.

3 A. Oh, wait a minute. No or yes depending  
4 on the phrasing. Please re -- restate it.

5 Q. Why -- why don't we rephrase to make  
6 sure we understand each other.

7 When you say -- when you try to  
8 represent -- when you represent the consensus that  
9 state sponsorship is not necessary for something  
10 to be considered money, do you mean to suggest to  
11 the court or a reader of your report that there is  
12 no legitimate economist that believes that state  
13 sponsorship is an important aspect of money?

14 MR. OPPENHEIMER: Objection  
15 to form.

16 A. No, I do not.

17 Q. Okay. Did you consider discussing any  
18 divergence or nonstandard views about what are the  
19 attributes of money?

20 MR. OPPENHEIMER: Objection  
21 to form.

22 Q. We know what you put in your report. So  
23 I'm -- I'm asking did you consider putting in your  
24 report that there are other views about what makes  
25 money or what makes money good?

1 MR. OPPENHEIMER: Objection.

2 A. Because my job as an expert is to  
3 highlight areas of common understanding, not to  
4 delve into arcane details of disagreements among  
5 this or that group, small, I did not -- I  
6 considered it not my job to delve into the arcane  
7 details of economic debate.

8 Q. Okay. Would it be fair to say, then,  
9 that as you sit here today, you cannot offer an  
10 opinion about whether XRP would be considered a  
11 currency under this state theory of money?

12 MR. OPPENHEIMER: Objection  
13 to form.

14 A. Please restate the question.

15 Q. Yeah.  
16 You don't know whether XRP would be  
17 considered money or a currency by those who hold  
18 to a state theory of money, do you?

19 MR. OPPENHEIMER: Objection  
20 to form.

21 A. I did not represent an opinion on that  
22 matter because I was not delving into arcane  
23 debates.

24 Q. I understand that. Thank you for  
25 clarifying. But my question was a little

1 different.

2 I'm asking if you know whether XRP would  
3 be considered a currency under the state theory of  
4 money.

5 THE REPORTER: I can't hear  
6 you.

7 Q. Would it be considered a currency under  
8 the state theory of money?

9 MR. OPPENHEIMER: Objection  
10 to form; asked and answered.

11 A. I did not offer an opinion on that.

12 Q. I understand you did not offer an  
13 opinion. I'm just trying to clarify whether you  
14 have an opinion on that. Do you know what the  
15 state theory of money is and do you know whether  
16 XRP fits it?

17 MR. OPPENHEIMER: Objection  
18 to form.

19 A. I did not offer an opinion on it.

20 Q. Okay. Sounds like you can't go any  
21 further in answering my question, is that right?

22 MR. OPPENHEIMER: Objection  
23 to form; mischaracterizes.

24 A. That absolutely mischaracterizes what I  
25 communicated. I communicated that I did not offer

1 an opinion.

2 Q. Well, as you sit here today, does XRP  
3 function as a currency under the state theory of  
4 money?

5 MR. OPPENHEIMER: Objection  
6 to form.

7 A. Because I did not offer an opinion, I  
8 have not thought deeply about it and I could not  
9 give an opinion.

10 Q. Fair enough.  
11 Is XRP accepted as fiat money in any  
12 country in the world?

13 MR. OPPENHEIMER: Objection  
14 to form.

15 Q. Let me -- let me rephrase.  
16 Do you know whether XRP is accepted as  
17 fiat or legal tender money in any country in the  
18 world?

19 MR. OPPENHEIMER: Objection  
20 to form.

21 A. I believe -- I -- I couldn't say for  
22 sure.

23 Q. I understand that caveat. That's  
24 important.

25 Do you think it might be and you're not



1       sure or do you think it is not, but you're not  
2       sure about that?

3                       MR. OPPENHEIMER:   Objection  
4                       to form.

5       A.    I just really couldn't say.

6       Q.    Not one way or the other?

7       A.    Not one way or the other.

8       Q.    So would it surprise you if it is  
9       somewhere?

10       A.    That -- so my question is not -- my --  
11       excuse me for a moment while I try to frame my  
12       answer.

13               This is a legal matter and it's beyond  
14       what I was asked to opine on and I have not  
15       thought about it deeply.

16       Q.    Fair enough.

17               I'd like to ask you about paragraph 11  
18       of your report.  If it would help you, feel free  
19       to take a moment to review it now.

20               (Pause)

21       A.    I've read it.

22       Q.    Okay.  And I need to apologize and make  
23       a clarification.  I've been using the term "money"  
24       and "currency" interchangeably.  I notice that in  
25       Footnote 1, you say you do that in your report as

1 well.

2 Are you okay with if I use money and  
3 currency interchangeably in this deposition?

4 MR. OPPENHEIMER: Objection  
5 to form.

6 You can answer.

7 A. Right. There's an important caveat that  
8 I'm sure you're aware of, as I am, that in certain  
9 contexts of macroeconomics, there's an important  
10 distinction and I teach that to my students  
11 regularly. But I find that colloquially, they are  
12 used interchangeably, and so I have done that in  
13 my report as well.

14 Q. Okay. So if it's important to make that  
15 distinction in either clarifying my questions or  
16 clarifying your answer --

17 THE REPORTER: Repeat.

18 Q. If it's important to make that  
19 distinction between currency and money in  
20 clarifying my questions or in explaining your  
21 answer, please do that.

22 A. Uh-huh.

23 Q. But if it's okay if we proceed using  
24 money and currency interchangeably as they're  
25 commonly used, that's how I will refer to it.

1 Is that okay?

2 A. That is --

3 MR. OPPENHEIMER: Objection.

4 A. -- okay.

5 Q. All right. So referring to paragraph 11  
6 of your report --

7 A. Uh-huh.

8 Q. -- and specifically to the idea that  
9 money is a medium of exchange, do you agree with  
10 me that a general acceptance of money is required  
11 in order to serve as a medium of exchange?

12 MR. OPPENHEIMER: Objection  
13 to form.

14 A. That would have to be unpacked and dealt  
15 with very carefully.

16 Q. So is that, no, you disagree with that  
17 as -- as I'm using it because you need additional  
18 clarification or you mostly agree, but there are  
19 exceptions?

20 MR. OPPENHEIMER: Objection  
21 to form.

22 A. So my objection to the phrasing you used  
23 has to do with "generally accepted," which is  
24 undefined.

25 Q. All right. You talk about medium of

1 exchange leading to an efficient exchange of goods  
2 and services, is that correct?

3 A. I also talk about medium of exchange in  
4 my report in terms of exchanging among currencies.

5 Q. Okay. Can you help us understand what  
6 you mean when you say "medium of exchange"? Does  
7 it not imply that in order for money or currency  
8 to be exchanged between different participants in  
9 economy, that people have to accept it for  
10 transactions in order for money to function?

11 MR. OPPENHEIMER: Objection  
12 to form.

13 A. As I describe in my report, money gets  
14 you from one item to another without the double  
15 coincidence it warrants.

16 So, for example, if someone has Japanese  
17 yen and someone else has Philippine pesos, the  
18 person with yen does not have to find someone --  
19 the person trying to sell yen does not have to  
20 find someone who wants to buy Philippine -- to  
21 sell Philippine pesos. You get it. Transact.

22 Someone with -- someone trying to sell  
23 yen and buy pesos does not need to find someone  
24 right away who wants to sell pesos.

25 Instead, they will go -- they will

1 exchange the yen for the medium of exchange, which  
2 on ODL is XRP, and the XRP they then exchange for  
3 the pesos. So the XRP on the ODL platform serves  
4 as a medium of exchange between the yen and the  
5 Philippine peso.

6 Q. So positing hypothetically a situation  
7 in which one person has yen and one person has  
8 pesos, but there is no bridge currency or asset  
9 like XRP, does yen function as a medium of  
10 exchange?

11 MR. OPPENHEIMER: Objection

12 to form.

13 You can answer if you  
14 understand.

15 A. I'm -- I -- could you restate that?  
16 My -- my answer had nothing to do with whether the  
17 yen is a medium of exchange or not. So I'm not  
18 quite sure what -- whether your question was  
19 correctly phrased.

20 Q. Well, I was asking you a hypothetical.  
21 So it may not have been correctly phrased, but  
22 what I was trying to get at is whether in an  
23 economy where some people have yen and some people  
24 have pesos, about whether they're -- whether there  
25 can be a medium of exchange if the people with the

1       yen don't accept pesos and the people with pesos  
2       don't accept yen?

3                       MR. OPPENHEIMER:   Objection  
4                       to form.

5           A.    I think I am still not finding a way to  
6       make sense of your question.

7           Q.    All right.  Let's talk about money in  
8       general.

9                       How many people in an economy have to  
10      accept a currency before it's really a currency?  
11      How many people have to accept an asset before it  
12      can be considered a currency?

13                     MR. OPPENHEIMER:   Objection  
14                     to form.

15          A.    So this is an interesting question.  The  
16      threshold is extremely low and -- but it has not  
17      formally been the subject of research.  I know  
18      that the threshold is extremely low because  
19      economists worldwide like to cite a paper by  
20      Radford about how cigarettes served as money in  
21      World War -- in a prisoner of war camp in World  
22      War II.  So the prisoner of war camp would have  
23      been relatively quite small, one presumes, and yet  
24      economists, in fact, assign this often to their  
25      students and it gets cited commonly.  It's almost

1 universally known and it's, in fact, all over,  
2 sort of, the media as a widely accepted  
3 illustration of a money.

4 So we have a threshold of the number of  
5 POWs accepting cigarettes as money in a POW camp  
6 in World War II. That's considered money by  
7 fairly -- you know, I can't say universally, but  
8 certainly by the vast majority of economists.

9 Q. And you're familiar with that paper by  
10 Radford because you cited it in your report,  
11 correct?

12 A. I have read it.

13 Q. Okay. So how many POWs accepted  
14 cigarettes as currency? Was it hundreds?

15 A. I do not remember whether the number was  
16 in there and exactly what the number -- roughly  
17 what the number would have been.

18 Q. Could it have been dozens?

19 MR. OPPENHEIMER: Objection  
20 to form.

21 A. You know, I do not recall the specifics  
22 of the size of the POW camp from the article, so I  
23 really would be unable to be specific.

24 Q. Well, for purposes of this hypothetical,  
25 assume that in this POW camp in southeast Asia,

1 there were thousands of American POWs, okay?

2 A. Uh-huh.

3 Q. And that many of them, many hundreds of  
4 them, received cigarettes in their Red Cross  
5 packages and so they were available to either  
6 smoke or trade.

7 So my question is, based on your  
8 understanding of how an asset can be used as a  
9 currency, how many people among thousands would  
10 need to accept cigarettes as currency in order for  
11 cigarettes to be considered money?

12 MR. OPPENHEIMER: Objection  
13 to the form.

14 A. As I have answered, there is no specific  
15 threshold in the academic literature. An implied  
16 threshold from the very, very wide acceptance of  
17 this paper is that it would be the number of POWs  
18 that were accepting cigarettes as currency.

19 Q. So are you saying you don't know whether  
20 it was a relatively small number or relatively  
21 large number of people that accepted cigarettes as  
22 currency?

23 MR. OPPENHEIMER: Objection  
24 to form.

25 A. "Relatively small" and "relatively



1 large" are not defined in this context. My  
2 understanding of the magnitude of POW camps would  
3 be that it was less than a million and possibly  
4 far less.

5 THE REPORTER: Less than a  
6 million?

7 THE WITNESS: And possibly  
8 far less.

9 Q. I'm sorry. Are you suggesting that it  
10 could be 900,000 POWs accepting cigarettes as  
11 currency?

12 MR. OPPENHEIMER: Objection  
13 to form.

14 A. It is possible that it was.

15 Q. You don't know one way or the other, is  
16 that fair?

17 MR. OPPENHEIMER: Objection.

18 A. I have been clear that I could not  
19 specify.

20 Q. Okay. For purpose of my -- for purpose  
21 of my hypothetical, I'm going to ask you to assume  
22 that only a small number of prisoners, a dozen or  
23 less, were willing to facilitate transfers of  
24 goods by accepting cigarettes in trade as  
25 currency.

1           If the number's really small, is it  
2       still fair to consider an asset a currency?

3                       MR. OPPENHEIMER:   Objection  
4       to form.

5           A.   I have -- "really small," there is no  
6       definition here.

7           Q.   Right.   That's why I suggested it's less  
8       than a dozen.

9           A.   In terms of less than a dozen, as I  
10      said, there is no threshold --

11          Q.   Okay.

12          A.   -- in the literature.

13          Q.   All right.

14          A.   There's an implied threshold of the size  
15      of a POW camp in Germany in World War II.

16          Q.   All right.   In terms of the trade  
17      between pesos and yen -- I guess that's not in  
18      paragraph 11, but in the one you mentioned before.

19                If someone is going to help someone with  
20      yen to get pesos and someone with pesos to get yen  
21      and they're going to use something like ODL as a  
22      bridge asset, would you say ODL's a currency if --  
23      if just one person is willing to accept ODL in  
24      payment for another currency?

25                       MR. OPPENHEIMER:   Objection

1 to form.

2 A. That -- that -- that's just -- I don't  
3 know how to put this. That's very speculative and  
4 I have not spent time considering that question.

5 Q. I need to clarify something. I said ODL  
6 when I should have said XRP. So let me give you  
7 another version of that question.

8 A. Okay.

9 Q. If only one or two people in an economy  
10 accept XRP in exchange for other goods or  
11 services, are you still comfortable calling XRP a  
12 currency?

13 MR. OPPENHEIMER: Objection  
14 to form.

15 You can answer.

16 A. My -- my opinion does not delve into  
17 that question and so I do not have a formal  
18 response for it.

19 Q. Okay. I understand you don't have a  
20 formal response and we can move on if -- if you  
21 cannot give me anything more. But I believe you  
22 said you don't believe that an asset like XRP has  
23 to be accepted by everyone. I believe you've also  
24 said you don't think an asset even has to be  
25 generally accepted. It just has to be accepted by

1 a subset of an economy.

2 So I'm trying to find out whether you're  
3 willing to put a lower limit on the number of  
4 people or participants in an economy that have to  
5 accept an asset before it can be considered a  
6 currency.

7 MR. OPPENHEIMER: Objection  
8 to form. It mischaracterizes  
9 testimony; misleading; and I think  
10 ambiguous, too.

11 You can answer.

12 A. I'd like to start with the  
13 mischaracterization. I said nothing about whether  
14 generally accepted is or isn't anything. I said  
15 it is not defined.

16 So I forget your phrasing, but it  
17 attributed something to me that I did not say.  
18 What I did say is that generally accepted is  
19 not -- is not defined.

20 Furthermore, I have said, and I repeat,  
21 and it's very important, that my job here is to  
22 communicate a consensus among the academics and  
23 not any -- for the court. And the academic  
24 literature has not, to my knowledge, delved into  
25 exactly how many people is necessary for general

1 acceptance or for something to be considered a  
2 currency.

3 And what I did say is that the implied  
4 number from the academic consensus is quite low by  
5 population standards. And I highlighted the  
6 example of the Radford piece where economists very  
7 broadly consider cigarettes to have been a money  
8 where the maximum number of individuals accepting  
9 and receiving them would have been the number of  
10 people in a German POW camp in World War II.

11 I could also cite the fact the  
12 Seychelles rupee is considered a currency and  
13 there are less than a million people in  
14 Seychelles, that the Europe -- eastern European  
15 currency unit is -- is accepted as a currency in  
16 St. Lucia and nearby islands and that the grand  
17 total of people living in those islands is less  
18 than a million.

19 So the -- the economists' consensus is a  
20 number that is below a million and possibly well  
21 below a million because it's the number of people  
22 in those German POW camp. And that's as much as I  
23 can say.

24 Q. Thank you for that clarification.

25 In describing the academic or

1 economists' consensus, is it fair to say that  
2 general acceptance would be an important attribute  
3 of money?

4 MR. OPPENHEIMER: Objection

5 to form.

6 A. Again, general acceptance is not  
7 defined.

8 Q. Whether or not it's defined, is that  
9 something that's used in the literature? Is that  
10 something that academics talk about when  
11 discussing whether something is money?

12 MR. OPPENHEIMER: Objection

13 to form.

14 A. It comes up. It comes up. The Federal  
15 Reserve of St. Louis lists it as a helpful  
16 attribute.

17 But, to be -- to be -- to be very clear,  
18 acceptability, the nature of it is ill-defined and  
19 the minimum threshold for acceptability is -- is a  
20 number well below a million as we see in -- in the  
21 generally accepted currencies according to  
22 economists.

23 Q. Are you saying that -- scratch that.  
24 Let's -- let's move on to a different topic.  
25 Let's talk about store of value.

1 I'd like to refer to you paragraph 12 on  
2 page 5 of your report.

3 THE WITNESS: Actually, I'd  
4 like to take a quick break.

5 MR. OPPENHEIMER: Is this a  
6 good time?

7 MR. MOYE: Fine with me.

8 THE VIDEOGRAPHER: Okay.  
9 Going off the record, 11:08.

10 (Whereupon, a recess is taken.)

11 THE VIDEOGRAPHER: Okay.  
12 We're back on the record at 11:19.

13 BY MR. MOYE:

14 Q. Professor Osler, would I be correct that  
15 among economists, there's a consensus that money  
16 has three main attributes and that those would be  
17 money as a medium of exchange, that it is a store  
18 of value, and it is a unit of account?

19 MR. OPPENHEIMER: Objection  
20 to form.

21 A. I would -- no. Those are the functions  
22 of money. The attributes I highlight that are  
23 helpful are other things.

24 Q. Okay. Thanks for that clarification.

25 Looking at the three main functions of

1 money, am I also correct that there's a hierarchy  
2 among these functions of money; that some  
3 functions are easier to achieve or harder to  
4 achieve than others?

5 MR. OPPENHEIMER: Objection

6 to form.

7 A. Let's be careful. The functions of  
8 money I highlight, there are four and -- there are  
9 four, just to be clear. And is there a hierarchy  
10 among them? Not that -- not that I could be aware  
11 of.

12 Q. Okay. Which is the more important  
13 function of money: To be a medium of exchange or  
14 to be a store of value?

15 MR. OPPENHEIMER: Objection

16 to form.

17 A. There is no hierarchy that I'm aware of.

18 Q. So if something is used commonly as a  
19 medium of exchange among goods and services, but  
20 it doesn't hold the value very well, can it still  
21 be money?

22 MR. OPPENHEIMER: Objection

23 to form.

24 A. This happens all the time.

25 Q. So is that a yes?



1 A. Yes.

2 Q. Okay. And let's assume that something  
3 is used as a medium of exchange or means of  
4 payment and more or less holds its value but it's  
5 difficult to use as a unit of account, can it  
6 still be money?

7 MR. OPPENHEIMER: Objection  
8 to form.

9 A. If it's used as a medium of exchange, it  
10 is effectively used as a unit of account.

11 Q. Could you elaborate on that, please?

12 A. So --

13 Q. If I'm trading cows --

14 A. So let's go back to my example of the  
15 yen and Philippine pesos. So in the transaction  
16 where someone is selling yen and buy -- in  
17 exchange for Philippine pesos, the -- at the -- a  
18 transaction that goes through a vehicle currency  
19 like XRP. So the person with yen is going to buy  
20 XRP. And so the price is how many XRP per yen?  
21 So in that sense it's being used as a unit of  
22 account. Yen are being measured in XRP.

23 Q. Thank you for using that example. I'd  
24 like to suggest a different example and get your  
25 feedback on it.

1           Suppose I'm trading yen for Philippine  
2 pesos directly without using a bridge or  
3 intermediate asset.

4           Are you suggesting that both of those  
5 currencies are a unit of account for the other?

6                       MR. OPPENHEIMER: Objection  
7 to form.

8           A. That problem has -- that statement  
9 has -- the hypothetical has premises that are  
10 incorrect.

11          Q. So can you answer or not?

12                       MR. OPPENHEIMER: Objection  
13 to form.

14          A. Because the premises are incorrect, the  
15 question is not -- there is no question.

16          Q. Okay.

17          A. It makes no sense.

18          Q. Let me try something different.

19                       Would you agree that to be -- to -- to  
20 function as a medium of exchange, money needs to  
21 be a store of value?

22                       MR. OPPENHEIMER: Objection  
23 to form.

24                       You can answer.

25          A. Implicit in the nature of the medium of

1 exchange is the idea that something can be a store  
2 of value at least briefly.

3 Q. Okay. In order to be a unit of account,  
4 isn't a wide acceptance either required or  
5 implied?

6 A. No.

7 Q. Okay. In paragraph 12 on page 5 of your  
8 report, when you define unit of account, which is  
9 underlined, and store of value, which is also  
10 underlined, what is the source or -- or citation  
11 for these concepts?

12 A. This is something that economists  
13 with -- Ph.D. economists learn this starting in  
14 college and then in grad school. And I provided a  
15 specific citation to a specific source to  
16 illustrate that these things -- these concepts are  
17 out there. But the source, this is -- this is  
18 what we're taught basically.

19 Q. Okay. So you're describing a consensus  
20 with those definitions? Those are consensus  
21 definitions?

22 A. Yes, I am.

23 Q. Okay. So at the beginning of paragraph  
24 12, the first sentence, you do have a -- an  
25 identified source in paragraph 7, the Federal

1 Reserve Bank of St. Louis.

2 As you've written it, does the -- are  
3 the definitions of unit of account and store of  
4 value, are they also described by the Federal  
5 Reserve of St. Louis in that same source?

6 MR. OPPENHEIMER: Objection  
7 to form.

8 Q. I'm just trying to understand how you  
9 arranged it here.

10 A. I arranged it as follows: I defined it  
11 myself and then I found a source that lists unit  
12 of account and store -- store of value.

13 Q. Okay. And what was that source?

14 A. Let's see. I found the Federal -- the  
15 Federal Reserve Bank of St. Louis, Functions of  
16 Money, and the Mankiw was also used to illustrate  
17 sources that cite these functions.

18 Q. Okay. So talking -- right now my  
19 questions are going to be about the Federal  
20 Reserve of St. Louis and not about the Mankiw.

21 But Mankiw is spelled M-A-N-K-I-W, is  
22 that right?

23 A. That's correct.

24 Q. So is this -- is the -- is the source  
25 you cited in Footnote 7, the Federal Reserve Bank

1 of St. Louis, is that a written publication?

2 A. Please define "written publication."

3 Q. Yeah. Is it a paper or is it a podcast?

4 MR. OPPENHEIMER: Objection.

5 You can answer.

6 A. It's a podcast that I remember had a  
7 written -- the text was written.

8 Q. So like a transcript?

9 A. A transcript.

10 Q. Okay. So that cite is both a podcast  
11 that you can listen to and it's a transcript,  
12 right?

13 A. Yes.

14 Q. Okay. Who's the speaker on that  
15 podcast?

16 A. That's a great question. I don't know.

17 Q. Do you know whether this is an economist  
18 or whether it's a PR person?

19 MR. OPPENHEIMER: Objection.

20 Q. And those are not the only  
21 possibilities, of course. I'm trying to find out  
22 who is the source of this podcast and transcript.

23 A. The source would be Federal Reserve Bank  
24 of St. Louis economists. Whoever spoke it is  
25 another matter.

1 Q. Okay.

2 A. It would be like whoever reads a book on  
3 Kindle.

4 Q. All right. So you think -- it's your  
5 understanding that whoever is describing the  
6 matters in the podcast is an economist or is  
7 speaking for the economists at the Federal Reserve  
8 Bank of St. Louis? Is that fair?

9 MR. OPPENHEIMER: Objection.

10 You can answer.

11 A. As a Federal Reserve Bank of -- Federal  
12 Reserve Bank of St. Louis publication, it will  
13 have been endorsed by economists at the Federal  
14 Reserve Bank of St. Louis.

15 Q. So presumably vetted by those in charge.  
16 Is that fair?

17 MR. OPPENHEIMER: Objection.

18 A. I have assumed as much.

19 Q. Okay. But with regard to the podcast  
20 itself, is this a podcast intended for academics  
21 or do you think it might be a podcast intended for  
22 high school or secondary aged students?

23 MR. OPPENHEIMER: Objection

24 to form.

25 You can answer.

1           A.    I intentionally chose some of my  
2    citations so that they would be accessible to  
3    people who were not economists. And this one is  
4    intended for -- I believe it was high school  
5    students, and so it would have been accessible.

6           Q.    So the widest possible acceptance. Fair  
7    enough?

8                         MR. OPPENHEIMER:  Objection.  
9                         You can answer.

10          A.    No. It was intended for U.S. high  
11    school students.

12          Q.    Okay. You could have cited something  
13    else, correct? An academic paper or some of your  
14    own work, perhaps?

15          A.    I could certainly have cited something  
16    else. Absolutely.

17          Q.    Okay.

18          A.    As a member of the Federal Reserve  
19    system whose function is to manage the monetary  
20    policy of the United States, which includes money  
21    as -- absolutely at the core of it, the Federal  
22    Reserve can be considered expert.

23          Q.    Are you suggest --

24                         THE REPORTER:  Can be  
25                         considered?

1 THE WITNESS: Expert.

2 Q. Are you -- are you suggesting that this  
3 podcast is an authoritative statement by the  
4 Federal Reserve system about the attributes of  
5 money?

6 MR. OPPENHEIMER: Objection  
7 to the form.

8 A. "Authoritative" is not defined.

9 Q. So is that a yes or a no?

10 MR. OPPENHEIMER: Objection.

11 A. That is -- we'd have to clarify the  
12 definition of "authoritative" before I could  
13 answer that question.

14 Q. Can we go over to page 13?

15 A. Sure.

16 Q. I'm sorry, paragraph 13, also on page 5.

17 You say "XRP serves all four functions  
18 of a currency just discussed." And then you  
19 indicate the different functions that you  
20 described previously in your report.

21 Do you see that?

22 A. I do.

23 Q. Okay. Do you have a source for your  
24 conclusion or are you the source for your  
25 conclusion?



1 MR. OPPENHEIMER: Objection

2 to form.

3 Q. This is what I'm trying to get at: Are  
4 you saying someone else already concluded that XRP  
5 serves these functions or you, for the purpose of  
6 this engagement, have drawn such a conclusion?

7 MR. OPPENHEIMER: Objection.

8 A. I -- I am stating that in -- my opinion  
9 is in the report, I used the four functions  
10 highlighted by academics, including economists and  
11 others, and I identify how XRP serves those  
12 functions.

13 So I am -- in this -- in this paragraph,  
14 I am building on the consensus -- the consensus  
15 among academics and using the facts that are  
16 available to me to draw conclusions.

17 Q. Are you aware of any other economist  
18 besides yourself that has evaluated XRP with  
19 respect to the four functions of money, or  
20 currency, and drawn the same conclusion you have?

21 A. No. I am not aware that economists have  
22 made the specific attempt to characterize XRP in  
23 terms of the functions of money.

24 Q. Okay. When you say that XRP is a "unit  
25 of account" -- which I think is the last sentence

1 in paragraph 13.

2 Do you see that?

3 A. I do.

4 Q. What is XRP used to value? What are the  
5 other things available to exchange that XRP is  
6 used to value?

7 MR. OPPENHEIMER: Objection  
8 to form.

9 You can answer.

10 A. I'd like to highlight that we've  
11 addressed this question and I have clarified that  
12 XRP is a medium of exchange between currencies and  
13 that in that process, XRP is used to value  
14 currency.

15 Q. Did you mean to include anything else in  
16 your answer? I'm just trying to be complete.

17 MR. OPPENHEIMER: Objection  
18 to the form.

19 A. I -- it's unclear what you mean by my  
20 answer.

21 Q. Let me try to clarify.

22 Is XRP value -- I'm sorry.

23 Is XRP used as a unit of account for any  
24 purposes other than currency trading?

25 MR. OPPENHEIMER: Objection

1 to form.

2 A. In some contexts, yes.

3 Q. What are those contexts?

4 A. There are -- there are websites where  
5 one can purchase items priced in -- at least one  
6 website I know of where one can purchase items,  
7 goods, and -- goods and services, that are priced  
8 in XRP.

9 But to recall, trading volume on -- the  
10 def -- yeah. The definition of a medium of  
11 exchange does not say that something has to be a  
12 medium of exchange for everything at all times and  
13 for all people. Clearly nothing is a medium of  
14 exchange for everything at all times among all  
15 people.

16 What I have highlighted is that XRP is a  
17 medium of exchange among currencies daily and in  
18 millions of transactions -- let me be precise.

19 Daily trading over ODL is measured,  
20 according to my best estimate, in hundreds of  
21 millions of XRP and -- so in that context, XRP is  
22 being used as a medium of exchange every day in  
23 substantial quantities. And because it's being  
24 used as a medium of exchange in that context, when  
25 in the conversion process, it is being used as a

1 unit of value, unit of account.

2 Q. Who is using ODL today?

3 MR. OPPENHEIMER: Objection

4 to form.

5 Q. To trade currencies.

6 A. Today specifically? I couldn't tell  
7 you.

8 Q. How about at the time you issued your  
9 report in October of 2021?

10 MR. OPPENHEIMER: Objection.

11 A. On any specific day, I -- that  
12 information -- you could use the -- the ledger to  
13 identify the accounts, but the specific exactly  
14 who traded XRP over ODL on any given day is not  
15 available unless one can identify backward from  
16 the ledger accounts to the holder of the account.

17 Q. How about generally? Do you have any  
18 understanding whether, in October of 2021, anyone  
19 was using ODL to transact exchanges in foreign  
20 currency?

21 MR. OPPENHEIMER: Objection

22 to form.

23 A. Total trading in XRP reached over 400  
24 billion in the -- in Q3 and roughly a quarter of  
25 that trading is estimated to go through ODL. Now,

1 Q3 ends in the end of September, but the  
2 suggestion that all of a sudden there may have  
3 been no ODL trading in October is interesting.

4 Q. All right. Well, it's your opinion.  
5 I'm just trying to get the basis for it. I'm not  
6 suggesting that all of my questions are correct,  
7 as you've often pointed out.

8 Do you know whether -- whether Ripple  
9 has a partner, someone that is using ODL to  
10 transact foreign currency exchanges?

11 A. Yes.

12 MR. OPPENHEIMER: Objection.

13 THE WITNESS: Sorry.

14 Q. And as you sit here today, who is that?  
15 Who are those companies or partners that are using  
16 ODL in foreign currency exchange?

17 MR. OPPENHEIMER: Objection  
18 to form.

19 You can answer.

20 A. As of the most recent time I looked at  
21 this, those partners included SBI Financial in  
22 Japan. Okay. I've got to remember these things.  
23 Coin.ph. That's the Philippines one. There's  
24 a -- oh, there are a bunch of them along the  
25 Pacific Rim and the exact names of these accounts

1 I don't -- of these remittance providers I don't  
2 precisely know. Those are two of them. There's  
3 quite a list of them.

4 Q. Okay. And you think this trading's  
5 continuing in significant amounts in at least Q3  
6 of 2021?

7 MR. OPPENHEIMER: Objection.

8 You can answer.

9 A. The evidence available to me indicates  
10 that it has.

11 Q. Okay. What evidence was available to  
12 you? I think you mentioned a website, but I'm  
13 trying to find out what source you looked at in  
14 order to determine that.

15 MR. OPPENHEIMER: Objection.

16 A. So let's be clear. I did not opine on  
17 this in my report, on the magnitude. I do not  
18 have any facts or statements in there. I have  
19 subsequently read up a little more just to keep  
20 learning. And so -- I'm losing track. Remind me  
21 the question.

22 Q. I'll transition a little bit.

23 You indicated in your testimony a few  
24 moments ago that you thought that as of Q3 2021,  
25 about 25 percent of the purchases of XRP were for

1 purpose of foreign exchange.

2 Is that a fair summary of your prior  
3 testimony?

4 MR. OPPENHEIMER: Objection.

5 You can answer.

6 A. I said trading rather than purchases.

7 Q. Thank you for the clarification.

8 Do you think that 25 percent of the  
9 trading in XRP is for purposes of foreign currency  
10 exchange rather than for some other purpose?

11 MR. OPPENHEIMER: Objection  
12 to form.

13 A. I -- no. I specifically referred to  
14 ODL, trading on ODL, as 25 percent of trading in  
15 XRP.

16 Q. Okay. Do you think ODL has other  
17 purposes other than for foreign currency exchange  
18 or am I understanding that that is the subset of  
19 uses of XRP?

20 MR. OPPENHEIMER: Objection  
21 to form.

22 A. My understanding is that that is the  
23 primary purpose that -- the primary purpose is to  
24 facilitate international payments, which has been  
25 the strategical of Ripple since two thousand --

1 for roughly a decade now. And ODL is one of the  
2 products that serves that purpose. And so far it  
3 has been primarily direct -- or the -- my  
4 understanding has been that Ripple wisely -- in  
5 executing its strategy of disruptive innovation  
6 and trying to achieve a network, that Ripple has  
7 focused initially on remittances, which is not a  
8 major focus in -- among most banks.

9 Q. All right. I promise we will get to all  
10 of that in the future.

11 In terms of the trading in XRP which you  
12 referred to a few moments ago, I don't think that  
13 trading, those percentages, are referred to  
14 anywhere in your initial or rebuttal report.

15 Is that fair?

16 A. That's correct.

17 Q. Okay. And would I be correct that in --  
18 whatever source you used to learn about trading in  
19 XRP would have come through a publication by  
20 Ripple or an exchange associated with Ripple?

21 MR. OPPENHEIMER: Objection

22 to the form.

23 A. That question has a few different things  
24 in there. Please, perhaps you could state it  
25 individually.



1 Q. Sure. Sure.

2 What's your source for learning about  
3 the trading of XRP?

4 A. Since I put out my report, Ripple issued  
5 its Q3 report and that was summarized in a  
6 techno -- oh, it's not clear what we call these  
7 things.

8 Q. Publication?

9 A. Like a newspaper online.

10 Q. A publication?

11 A. And it's called Tech something or other.  
12 TechNX or Tech -- Tech something.

13 Q. Okay.

14 A. And they reported on it.

15 Q. Okay. So the ultimate source would have  
16 been Ripple, but the source that you consulted  
17 would have been some online publication.

18 A. And then --

19 MR. OPPENHEIMER: Objection  
20 to the form.

21 Q. Is that correct?

22 MR. OPPENHEIMER: Objection.

23 A. That is on the 25 percent figure.

24 Q. Okay.

25 A. The actual trading figures -- have we --

1 the 416 billion, that was a Ripple source. Yeah,  
2 that was a Ripple source. Online.

3 Q. Okay.

4 A. Publicly available.

5 Q. Okay. So the other 75 percent of  
6 trading in XRP --

7 A. Uh-huh.

8 Q. -- what's your understanding of what  
9 that is?

10 MR. OPPENHEIMER: Objection  
11 to form.

12 A. That really goes beyond the opinions  
13 I've expressed and I have not thought carefully  
14 about it, so I would not be able to say with any  
15 certainty.

16 Q. So you don't know?

17 A. I would not be able to say with any  
18 certainty.

19 Q. I'm not asking about a certain opinion.  
20 I'm asking do you know? Do you have any  
21 understanding?

22 MR. OPPENHEIMER: Objection  
23 to form.

24 A. If we -- I'm -- if you -- okay. I had  
25 said I could not say with any certainty.

1 Q. Sounds like -- sounds like that's all  
2 you're willing say about that, is that correct?

3 MR. OPPENHEIMER: Objection.

4 A. I have said that I could not say with  
5 any certainty.

6 Q. Do you believe that the majority of  
7 trading in XRP is for investment purposes?

8 MR. OPPENHEIMER: Objection.

9 A. No.

10 Q. Am I correct that XRP is traded for fiat  
11 currencies on digital -- on a number of digital  
12 asset platforms?

13 MR. OPPENHEIMER: Objection.

14 You can answer.

15 A. That is my understanding, yes.

16 Q. And am I also correct that a number of  
17 these dig -- of these digital asset platforms  
18 would primarily be involved with other currency --  
19 currencies other than the U.S. dollar?

20 MR. OPPENHEIMER: Objection

21 to the form.

22 A. I couldn't say.

23 Q. Okay. Let me ask you this: When XRP is  
24 purchased or traded on digital asset platforms, is  
25 it always purchased in U.S. dollars?

1 A. I couldn't say.

2 Q. Assuming for the purposes of this  
3 question that XRP is sometimes purchased using  
4 currencies other than U.S. dollars, does that  
5 count as a currency exchange as you understand it?

6 MR. OPPENHEIMER: Objection.

7 You can answer if you  
8 understand.

9 A. Currency exchange is not -- that would  
10 need some definition.

11 Q. Okay. If someone in the Philippines,  
12 hypothetically, wants to buy XRP because they want  
13 to hold that token for some period of time, does  
14 that purchase -- do you know whether that purchase  
15 involves the use of fiat currency?

16 MR. OPPENHEIMER: Objection  
17 to form.

18 You can answer.

19 A. If the Philippine pesos is involved?  
20 That's a fiat currency. So, technically speaking,  
21 a fiat currency would be involved.

22 Q. I'm not limiting myself to the  
23 Philippine pesos.

24 Do you know whether any other fiat  
25 currencies are involved in the purchase of XRP

1 from the Philippines?

2 MR. OPPENHEIMER: Objection  
3 to the form.

4 A. Let me see how I can put this. I --  
5 yeah. I think I would say that, no -- no. If  
6 it's Philippine pesos versus XRP, there's one fiat  
7 currency involved.

8 Q. Okay. As you sit here today, do you  
9 know whether you can purchase XRP using Philippine  
10 pesos?

11 A. Do you mean me personally?

12 Q. Not you. A person.

13 A. A person. Yes. That trader could be  
14 me.

15 Q. Can XRP be purchased using yen?

16 A. Yes.

17 Q. Can it be purchased using pound  
18 sterling?

19 A. I could not verify that one way or the  
20 other.

21 Q. Can it be purchased using euros?

22 A. I could not verify that.

23 Q. Can it be purchased using Mexican pesos?

24 A. I am pretty certain it can.

25 Q. Can it be purchased using Bolivian or

1 Venezuelan currency?

2 A. I could not say.

3 Q. Do you know where XRP is actually being  
4 used as a medium of -- medium of exchange among  
5 other currencies?

6 MR. OPPENHEIMER: Objection  
7 to form.

8 You can answer.

9 A. I know some of the corridors for  
10 certain. The remittance service providers that  
11 use it cover many, many locations and some are  
12 worldwide. And exactly where XRP is or is not  
13 being used would -- one could not say unless one  
14 were to scan individually all the individual  
15 service providers.

16 Q. Which are the ones that you know about?

17 A. Well, as I've mentioned, there's a list,  
18 but the names do not all come to mind.

19 Q. You mentioned Japan.

20 A. I mentioned --

21 Q. You mentioned --

22 A. -- SPI in Japan and I mentioned Coins.ph  
23 in the Philippines.

24 Q. Okay. Are you personally aware of other  
25 locations, countries, where XRP uses a medium of

1 exchange among currencies?

2 MR. OPPENHEIMER: Objection  
3 to the form.

4 You can answer.

5 A. I can say that XRP is -- no, I couldn't  
6 say that it is in the sense that you can't track a  
7 transaction.

8 Q. Okay.

9 A. I can say where remittance service  
10 providers operate that have a relationship with  
11 ODL. And those corridors include Singapore to a  
12 lot of the Pacific Rim countries. Hong Kong to  
13 Pacific Rim countries. Japan to Pacific Rim and  
14 some other countries. Hong Kong, Singapore,  
15 Japan, Taiwan.

16 So basically the more advanced countries  
17 in the Pacific Rim to other Pacific Rim countries  
18 and in some cases well beyond.

19 Q. Okay. This question may be beyond my  
20 own technical expertise and you may or may not  
21 know the answer, but just to try.

22 In -- let's pick one of these corridors  
23 that you mentioned, the Philippines. Whatever the  
24 name of that service provider or providers is, do  
25 you know where that service provider sources its

1 XRP? In other words, where does it buy XRP?

2 MR. OPPENHEIMER: Objection  
3 to form.

4 A. The -- on the ODL platform, it buys the  
5 XR -- XR -- Ripple serves as market maker on XRP.

6 Q. Okay. And after the XRP is used as a  
7 bridge asset, how does the service provider sell  
8 XRP if it chooses to do so?

9 MR. OPPENHEIMER: Objection  
10 to form.

11 A. So that was included implicitly in my  
12 previous answer. A market maker will buy it and  
13 sell it. And so Ripple's making markets both ways  
14 in XRP.

15 Q. All right. Let's go to page 6,  
16 paragraph 14. So feel free to refer to paragraph  
17 14 and 15 if needed, but my question does not  
18 specifically come from either of those paragraphs.  
19 I want to ask you about price fluctuations in XRP.

20 You've indicated, I believe, in your  
21 report that price fluctuations in an asset did not  
22 mean it cannot be considered a currency.

23 Is that a fair summary of your view?

24 MR. OPPENHEIMER: Objection.

25 A. I've been quite specific -- I'm thinking



1 about it. I have highlighted that there are  
2 currencies whose value is -- fluctuates that are  
3 considered -- there are assets that are considered  
4 currencies whose value fluctuate.

5 Q. In Figure 1, you mention the pound and  
6 the dollar. In paragraph 15, you mention the  
7 Venezuelan bolivar. So I'd like to draw your  
8 attention to the last sentence in paragraph 14.  
9 You say "The existence of day-to-day fluctuations  
10 in XRP exchange rates does not change the nature  
11 of XRP as a currency."

12 Do you see that?

13 A. I do.

14 Q. Okay. That's one of your conclusions in  
15 this report, correct?

16 MR. OPPENHEIMER: Objection.

17 You can answer.

18 A. That -- it is -- no, it is not. It  
19 is -- it is not a conclusion in my report.

20 Q. Do you believe this, this last sentence?  
21 Is this a fair statement of your view?

22 MR. OPPENHEIMER: Objection  
23 to form.

24 A. It is a fair -- it is a supporting  
25 statement insofar as I highlight that -- so the

1 functions of a currency that I've identified and  
2 the -- as consensus among economists and the  
3 favorable attributes of an asset that help it  
4 perform as a currency, I've highlighted that XRP  
5 largely fulfills and I have -- or that XRP  
6 fulfills the functions and has the attributes.

7 And I highlight -- essentially what I'm  
8 highlighting is that it is never assumed in  
9 defining money that its value is unchanging.

10 Q. Thank you. Perhaps I phrased my  
11 question poorly. I was really trying to get at  
12 something else.

13 You wrote this last sentence in  
14 paragraph 14, correct? That's your work?

15 A. That is my work.

16 Q. And you're not citing to a publication  
17 or to any other person, correct?

18 A. Yes.

19 Q. Okay. So that is a statement of belief  
20 or view or opinion that you're offering in this  
21 report, correct?

22 MR. OPPENHEIMER: Objection.

23 Q. Statement of your own view or belief,  
24 correct?

25 MR. OPPENHEIMER: Objection.

1           A.    Let's be clear.  What I say is that --  
2   is implicitly the same as what I just said to you.  
3   That it's never assumed that a currency is -- has  
4   no changes in its value and, therefore, whether it  
5   has changes or not is -- does not change the  
6   conclusion one way or the other.

7           Q.    Do you know whether XRP has day-to-day  
8   fluctuations in its exchange rates or are you  
9   speaking hypothetically?

10          A.    I am highlighting --

11                       MR. OPPENHEIMER:  Objection.

12                       You can answer.

13                       THE WITNESS:  Oops, sorry.

14                       MR. OPPENHEIMER:  It's okay.

15          A.    I cite in my rebuttal report a specific  
16   volatility figure of .0083 percent over five  
17   seconds indicating that the price has changed.

18          Q.    So, I'm sorry, I was asking about  
19   day-to-day fluctuations.

20                       Do you know whether there are day-to-day  
21   fluctuations in XRP exchange rates?

22                       MR. OPPENHEIMER:  Objection  
23                       to form.

24          A.    By extrapolation from the volatility  
25   figure I just gave you, there are day-to-day

1       fluctuations in XRP exchange rates just like there  
2       are day-to-day fluctuations in other exchange  
3       rates that are not government controlled.

4           Q.     Okay.  Am I correct that you have not  
5       looked at the day-to-day fluctuations in XRP  
6       exchange rates, or at least you had not done so at  
7       the time you wrote this report?

8                       MR. OPPENHEIMER:  Objection.

9           A.     No, that's not correct.

10          Q.     Okay.  So at the time you wrote this  
11       report, you were aware of the day-to-day  
12       fluctuation rates in the XRP exchange rate.  Is  
13       that fair?

14                       MR. OPPENHEIMER:  Objection.

15          A.     This is putting words into my mouth.  So  
16       I was aware that -- I had seen charts of XRP value  
17       and I -- I may have included one as a figure.  
18       I've seen charts of the XRP value and that shows  
19       that it changes.

20          Q.     Okay.  Are there any charts of changes  
21       in XRP value in this report?

22          A.     I don't believe I included one in the  
23       end.  No.

24          Q.     Okay.  You could have included such a  
25       chart, correct?

1 A. They exist.

2 Q. You chose not to?

3 A. It did not seem useful.

4 Q. Did anyone tell you that it was not  
5 useful?

6 A. No.

7 Q. Okay. That was your decision?

8 A. It was never a decision. I never  
9 thought it -- I only think about charts that might  
10 be useful and this one did not seem to have a  
11 value.

12 Q. Okay. Figure 1 shows differences in  
13 exchange rate between the United Kingdom pound and  
14 the U.S. dollar, correct?

15 A. Yes, it does.

16 Q. How difficult would it have been you --  
17 would it have been for you to show differences in  
18 the price of XRP in U.S. dollars within the last  
19 ten years?

20 MR. OPPENHEIMER: Objection  
21 to form.

22 A. As I said, these charts exist.

23 Q. Would it have been difficult or not  
24 difficult to do?

25 A. It would not have been --

1 MR. OPPENHEIMER: Objection.

2 THE WITNESS: Okay.

3 A. As I said, it would -- I did not think  
4 one way or the other about including it.

5 Q. Well, let me flip that around then.

6 Why did you think about and include a  
7 comparison between the UK pound and U.S. dollar  
8 instead of, for example, showing variations in the  
9 price of XRP over time?

10 MR. OPPENHEIMER: Objection.

11 You can answer.

12 A. It seemed intuitively obvious XRP value  
13 changes. My point was to highlight that, first,  
14 the relative point of comparison for the dollar is  
15 its exchange rates. And, second, that the dollar  
16 value does change dramatically.

17 So to support my point about the dollar,  
18 the dollar chart was necessary and no other chart  
19 was relevant.

20 Q. Thank you for that. Let's -- let's look  
21 at paragraph 15.

22 When you talk about the Venezuelan  
23 bolivar depreciating, it looks like dramatically  
24 depreciating in 2018.

25 Do you see that?

1 A. Yes.

2 Q. What's your source for the changes in  
3 the value of the bolivar?

4 A. I -- I don't provide it, but I would  
5 have looked it up on Global Insight.

6 Q. I'm sorry, I didn't --

7 A. I would have gotten the data from Global  
8 Insight.

9 Q. What is Global Insight?

10 A. It's a database that includes the IMF  
11 exchange rate data and I would have looked at the  
12 IMF exchange rate data.

13 Q. And is it a publicly-available database  
14 or is it a private or pay for service database?

15 MR. OPPENHEIMER: Objection.

16 You can answer.

17 A. The -- the IMF data are publicly  
18 available.

19 Q. What about the Global Insight?

20 A. Global Insight is a private thing.

21 Q. Okay.

22 A. In fact, come to think about it, I have  
23 increasingly relied on the IMF source and I  
24 realize chances are pretty good. I went straight  
25 there.

1 Q. Okay. So perhaps you didn't use Global  
2 Insight. You just went to -- are you saying you  
3 probably just went to a publicly-available source?

4 A. The IMF provides the data publicly now.

5 Q. Okay. So since you mentioned the  
6 significant depreciation of the bolivar, I want to  
7 ask you some questions about currency depreciation  
8 in general. I'm not referring specifically to the  
9 bolivar, so don't confine your answer to the  
10 bolivar if that's not appropriate.

11 Okay?

12 A. Uh-huh.

13 Q. What happens when a currency loses most  
14 or all of its value?

15 MR. OPPENHEIMER: Objection  
16 to form.

17 Q. Like, what is the reaction of people in  
18 the economy if a currency loses most of its value?

19 MR. OPPENHEIMER: Objection.

20 A. I want to preface any answer by  
21 highlighting as I did in my rebuttal to [REDACTED] and  
22 as I said earlier today, that the relative  
23 comparison to XRP prices is to exchange rates.  
24 And so the important questions have to do with  
25 exchange rates and -- right.



1           And so when a currency loses value,  
2           which happens all the time around the world, it  
3           generally is still used.

4           Q.   Is it -- do people begin using other  
5           currencies that hold their value more?

6                       MR. OPPENHEIMER:  Objection  
7           to form.

8           A.   Consistent with the fact -- as -- you'll  
9           recall that in my report, I highlight functions of  
10          a currency and helpful attributes of a currency.

11          So when a currency -- currencies gain  
12          and lose value all the time and -- and even in  
13          terms of goods and services, which, as I say, is  
14          not relevant to XRP.  And the -- and especially  
15          they lose value all the time, right, and they  
16          remain currencies.

17          So I think with respect to your  
18          question, I realize that there's no time frame  
19          addressed.  So if you don't mind, I'd like to  
20          highlight that most currencies have lost most of  
21          their value in terms of goods and services over  
22          the last century and they are still used as  
23          currencies.

24          Q.   Do some currencies go out of  
25          circulation?

1 MR. OPPENHEIMER: Objection.

2 A. I wouldn't be able to say that  
3 precisely.

4 Q. You don't know whether some countries  
5 have discontinued using one form of currency and  
6 begun using another?

7 MR. OPPENHEIMER: Objection.

8 A. I can remember one extreme case where I  
9 believe that happened.

10 Q. Okay.

11 A. Anyhow, no, not precisely.

12 Q. Do people begin preferring other  
13 currencies if a -- if a currency loses most or all  
14 of its value?

15 MR. OPPENHEIMER: Objection.

16 A. In general, no.

17 Q. And does that have anything to do with  
18 the fact that the fiat currency in a particular  
19 jurisdiction is required to be accepted as legal  
20 tender?

21 MR. OPPENHEIMER: Objection.

22 A. No.

23 Q. Have there been cryptocurrencies that  
24 have lost most or all of their value?

25 MR. OPPENHEIMER: Objection.

1           A.    I -- bitcoin's gone up and down.

2           Q.    Do you know whether there have been  
3 cryptocurrencies that have lost most or all of  
4 their value?

5                       MR. OPPENHEIMER:  Objection  
6 to form.

7           A.    I couldn't say.

8           Q.    So would it be fair to say that you  
9 don't know what happens if a cryptocurrency loses  
10 most or all of its value?

11                   MR. OPPENHEIMER:  Objection  
12 to form.

13           A.    It would be fair to say that the  
14 definition of losing most or all of its value is  
15 vague and would need to be defined more precisely.

16           Q.    Do you know whether there have been any  
17 cryptocurrencies that have ceased to be circulated  
18 or accepted because they're no longer considered  
19 to have any value?

20                   MR. OPPENHEIMER:  Objection  
21 to form.

22           A.    I couldn't say.

23           Q.    Hypothetically, if there was such a  
24 currency, we'll call it ABC, that had a value at  
25 one point and now has a value of zero, meaning no

1 one will accept it, would the people holding or  
2 still holding ABC be able to use it for any  
3 purpose?

4 MR. OPPENHEIMER: Objection  
5 to form.

6 A. You know, this is a hypothetical. I  
7 really am not in a position to speculate on it.

8 Q. All right. Let me put it a different  
9 way.

10 If XRP were to lose most or all of its  
11 value, do you know whether the people who hold XRP  
12 right now would be able to get their investment,  
13 initial investment, in XRP back?

14 MR. OPPENHEIMER: Objection  
15 to the form.

16 A. In any case --

17 MR. OPPENHEIMER: Wait.

18 THE WITNESS: Oh, I'm sorry.

19 MR. OPPENHEIMER: Assumes  
20 facts not in evidence,  
21 mischaracterizes facts, and vague and  
22 ambiguous.

23 You can answer.

24 A. Could you restate the question?

25 MR. MOYE: Could you read it

1 back, please?

2 (Whereupon, the record was read  
3 back.)

4 A. No, I do not know.

5 Q. Are you familiar with the term  
6 "intrinsic value"?

7 THE REPORTER: I'm sorry?

8 Q. Are you familiar with the term  
9 "intrinsic value"?

10 A. Yes, I'm familiar with the term.

11 Q. What does that mean as -- as you or  
12 other economists use that term?

13 MR. OPPENHEIMER: Objection.

14 You can answer.

15 A. I would say that it has no fixed  
16 definition. That it's -- it has no fixed  
17 definition.

18 Q. What does it mean to you personally  
19 then?

20 A. It depends on the context.

21 Q. Does XRP have an intrinsic value?

22 MR. OPPENHEIMER: Objection.

23 A. Again, since it's not defined, I can't  
24 answer that question.

25 Q. Does the U.S. dollar have an intrinsic

1 value?

2 A. Since it's not defined, I can't answer  
3 that question. Oh, I'm sorry. I can't answer  
4 that question.

5 Q. Does gold or cattle have an intrinsic  
6 value?

7 MR. OPPENHEIMER: Objection.

8 A. Again, without a very careful  
9 definition, I can't answer the question.

10 Q. Let's look at paragraph 16 of your  
11 report. You indicate that The Federal Reserve  
12 identifies six attributes that enhance the value  
13 of a currency and then you state what those  
14 attributes are, correct?

15 A. That's correct.

16 Q. And you also have a cite, a citation to  
17 a source, is that right?

18 A. Yes.

19 Q. What is the source for that -- what is  
20 your source for that statement?

21 A. The Federal Reserve Bank of St. Louis,  
22 the piece that I chose because it's accessible.

23 Q. Was the podcast and transcript piece  
24 credible?

25 A. Correct.

1 Q. Okay. And do you believe that's a  
2 consensus or are you attributing some special  
3 authority to the Federal Reserve Bank?

4 MR. OPPENHEIMER: Objection  
5 to form.

6 A. The -- I'm -- I can -- it -- it captures  
7 the consensus.

8 Q. Okay. So there's no --

9 A. I highlight there are some other things  
10 that come up in some other context and it's  
11 broadly characterized as a consensus.

12 Q. Sure. So it's not the only source you  
13 cite in this paragraph. There are some others as  
14 you said.

15 But in -- in the first sentence, when  
16 you say that the Federal Reserve, the world's  
17 dominant bank, identifies six attributes for  
18 the -- to enhance the value of currency, I just  
19 wanted to know if you were -- if you believe the  
20 Federal Reserve is stating the consensus among  
21 economists or is this a unique view that has  
22 special significance because it is from the  
23 Federal Reserve Bank?

24 MR. OPPENHEIMER: Objection  
25 to form.

1           A.    It is -- it is not intended as -- it --  
2   so it's -- as I say, there's no formal consensus  
3   among economists on -- on exact properties.  
4   There's just a lot of properties that are often  
5   listed. And the Federal Reserve Bank of St. Louis  
6   has a listed -- the list includes properties that  
7   are generally listed.

8           Q.    What does this series of attributes add  
9   to your analysis of XRP?

10                   MR. OPPENHEIMER:  Objection  
11                   to form.

12           A.    The analysis highlights attributes of an  
13   asset that help it function as money and -- yes,  
14   that's what it does.

15           Q.    And you talk about cows and even  
16   boulders in Micronesia. These -- these have all  
17   been used as money, correct?

18           A.    They have -- they're included in the  
19   list of things that have been used as money.

20           Q.    But they don't fit as well in these  
21   attributes of money as specified by the Federal  
22   Reserve, correct? That's why you mention them?

23                   MR. OPPENHEIMER:  Objection  
24                   to form.

25           A.    These are helpful and it's a care --



1 it's a -- it's important to be clear that none of  
2 them are neither -- they are neither necessary nor  
3 sufficient. They are helpful. So cows are --  
4 fail on one of -- you know, do not fulfill one of  
5 these, I think divisibility, but it was still used  
6 as money.

7 So to illustrate, yes.

8 THE REPORTER: So?

9 THE WITNESS: To illustrate,  
10 yes.

11 Q. And boulders, they don't fit all these  
12 categories, but boulders have still been used as  
13 money, correct?

14 A. Specifically on the island of Yap in  
15 Polynesia. And this is another -- like the  
16 Radford article about cigarettes, this is another  
17 piece that economists like to cite.

18 Q. Okay. So I'm -- I'm asking. I'm  
19 curious. Why include this? What does this add to  
20 your analysis of XRP if you say in the same  
21 paragraph that even things that don't have all of  
22 these attributes can still be used as money?

23 MR. OPPENHEIMER: Objection  
24 to form.

25 A. The point in adding that paragraph is

1 that XRP has all of these helpful attributes.

2 Q. Like cowrie shells?

3 A. I'd have to rethink through the cowrie  
4 shells, but, yes.

5 Q. Let's look at paragraph 17 where you  
6 talk about cowrie shells.

7 A. Yeah.

8 Q. Feel free to review that. I'm going to  
9 ask you a couple of questions about cowrie shells.

10 A. Ready to go.

11 Q. Okay. You point out in paragraph 17  
12 that cowrie shells have all of these attributes of  
13 money identified by the Fed, correct?

14 A. Yes, I go through those six or seven.

15 Q. Okay. So, again, similar question about  
16 the cows.

17 What does the discussion of cowrie  
18 shells add to your analysis of XRP as a currency?

19 MR. OPPENHEIMER: Objection  
20 to form.

21 You can answer.

22 A. The cowrie shells were included as a way  
23 of clarifying what the attributes mean. So  
24 divisibility, portability, et cetera. That is the  
25 sense in which cowrie shells were included. They

1       were an illustration for point of clarification.

2           Q.    Do cowrie shells have an intrinsic value  
3       independent of whether or not they're used as  
4       currency?

5                       MR. OPPENHEIMER:  Objection  
6                       to form.

7           A.    As I have said, intrinsic value is not  
8       defined in this conversation.

9           Q.    Are cowrie shells used in art among  
10       people in Africa?

11                       MR. OPPENHEIMER:  Objection.

12          A.    I could not say.

13          Q.    So you can't say whether that artwork  
14       using or consisting with cowrie shells is  
15       considered valuable today?

16                       MR. OPPENHEIMER:  Objection.

17          A.    I did not agree -- the premise of your  
18       question is that I agreed that there was such art  
19       and I have not agreed that there was such art.

20          Q.    Let me clarify.

21                       Since you don't know whether cowrie  
22       shells are used in art, you can't say whether  
23       cowrie shells used in artwork retain a value  
24       today, can you?

25                       MR. OPPENHEIMER:  Objection.

1           A.    This hypothetical extends way beyond  
2   what I was asked to look at in my opinion as is  
3   clear from -- would be clear from a quick review  
4   of the questions I was asked. And so I was not in  
5   a position to formulate an opinion on these  
6   questions.

7           Q.    Fair enough.

8                    You drive a direct comparison between  
9   how cowrie shells fit the attributes of money from  
10   the Fed and how XRP, in your view, fits those  
11   attributes of money, correct?

12          A.    Not correct.

13          Q.    So there's no connection between your  
14   discussion of cowrie shells and your connection of  
15   XRP? Is that your testimony?

16                   MR. OPPENHEIMER: Objection  
17                   to the form.

18          A.    My use of cowrie shells, as I answered  
19   earlier, is intended to clarify the meaning of the  
20   attributes in question. What is divisibility?  
21   What is portability? I do not directly compare  
22   cowrie shells with XRP in any way.

23          Q.    So when you say, then, that cowrie  
24   shells were a highly successful form of currency  
25   for centuries, and then you follow in the very

1 next paragraph with a discussion of XRP's  
2 satisfaction of the same attributes, were you  
3 intending to suggest that XRP might function as a  
4 currency for centuries in the same way that cowrie  
5 shells did?

6 MR. OPPENHEIMER: Objection

7 to form.

8 A. That is a -- that is a complete  
9 mischaracterization of what I might have to say in  
10 there.

11 Q. Fair enough. So it sounds like you  
12 disagree.

13 There's no connection between the  
14 status, then, of cowrie shells as a successful  
15 currency and whether or not XRP is a successful  
16 currency. Is that fair?

17 MR. OPPENHEIMER: Objection

18 to form; mischaracterizes testimony  
19 and vague and ambiguous.

20 A. Let me clarify again. I included cowrie  
21 shells to clarify the definitions of the  
22 attributes that are helpful for an asset to  
23 function as a currency. That is the purpose of  
24 including cowrie shells there.

25 Q. And it sounds like that's the only

1 purpose you have.

2 A. That is the only purpose.

3 Q. All right. In the beginning of  
4 paragraph 18 of your report, you say "'XRP has all  
5 of the attributes that economists agree to be  
6 valuable in a currency."

7 Do you see that?

8 A. I was referring back to the list of  
9 seven that I had before.

10 Q. Okay. So am I correct that you are  
11 stating in your report that economists -- the  
12 consensus of economists agree that these  
13 attributes contribute or enhance the value of  
14 money?

15 MR. OPPENHEIMER: Objection.

16 You can answer.

17 A. It enhances the ability of an asset to  
18 serve as money. I say nothing about the value of  
19 money.

20 Q. So at the beginning of paragraph 16 of  
21 your report --

22 A. Paragraph 16.

23 Q. -- the first sentence, when you're  
24 identifying the attributes sourced from the Fed,  
25 you say there that these attributes "enhance the

1 use value of a currency."

2 Is there a difference in your mind  
3 between the value of a currency and the use value  
4 of a currency?

5 MR. OPPENHEIMER: Objection.

6 A. Use value would be synonymous with what  
7 I just said. The ability of a currency or money  
8 to serve that function, or an asset as I have been  
9 specific. The ability of an asset to serve the  
10 functions of money.

11 Q. Does use value mean utility? Is that --

12 A. It means the ability of an asset to  
13 fulfill the functions of money.

14 Q. Okay. Do other -- you -- you've  
15 indicated in paragraph 18 that XRP has all of  
16 these attributes that could contribute to its  
17 usefulness as a currency.

18 Do most cryptocurrencies have these same  
19 attributes as XRP?

20 MR. OPPENHEIMER: Objection  
21 to form.

22 A. I wouldn't be able to say.

23 Q. Does bitcoin?

24 A. I'd have to think carefully about each  
25 one.

1 Q. It's not a test, but if you -- if you  
2 want to take a moment, if that would help you to  
3 give me an answer, that's fine. If you cannot  
4 give me an answer, we can move on. But if you  
5 have an answer, I'm interested.

6 MR. OPPENHEIMER: Objection  
7 to form.

8 A. So I would say that -- so -- could  
9 you -- could you repeat the question precisely  
10 now?

11 Q. Well, let me break it down. Maybe that  
12 would be helpful.

13 A. Okay.

14 Q. So you compared XRP to these attributes  
15 of a currency. So I'm asking you about bitcoin.

16 A. Uh-huh.

17 Q. So without giving me a considered or  
18 written deposition -- definition, but just as you  
19 understand it here, do you believe bitcone --  
20 bitcoin is portable in the same way XRP is  
21 portable?

22 MR. OPPENHEIMER: Objection.  
23 You can answer.

24 A. Yes.

25 Q. Do you believe bitcoin is divisible in



1 the same way XRP is divisible?

2 A. Yes.

3 Q. In fact, you even refer to bitcoin as a  
4 coin comparison.

5 A. I do.

6 Q. Do you believe bitcoin is uniform like  
7 XRP is uniform?

8 A. Yes.

9 Q. Do you believe bitcoin is acceptable in  
10 the same way you believe XRP is acceptable?

11 A. There are differences in the  
12 acceptability that are important.

13 Q. Do you believe bitcoin is accepted on  
14 more -- do you believe bitcoin is traded on more  
15 or less exchanges than XRP?

16 MR. OPPENHEIMER: Objection  
17 to the form.

18 A. That is not directly related to what I  
19 had to say.

20 Q. So you don't have an opinion on whether  
21 bitcoin is traded more frequently or less  
22 frequently on exchanges?

23 A. I have differences. I did not suggest  
24 more or a fewer exchanges.

25 Q. Okay. We'll come back to exchanges in a

1 moment but let's talk about storage costs.

2 Do you believe bitcoin has low storage  
3 costs the way XRP does?

4 A. I believe so.

5 Q. And do you believe bitcoin has limited  
6 supply the way XRP is limited?

7 A. Yes.

8 Q. All right. Let's go back to the  
9 attribute you highlight acceptability. You say  
10 "XRP can be traded on myriad exchanges around the  
11 world." I'd like to drill down on this is a  
12 little bit.

13 When you include this sentence, are you  
14 referring to the currency trading aspect --  
15 sorry -- the currency trading function of XRP that  
16 we discussed earlier in the deposition or are you  
17 referring to something like an exchange for goods  
18 or services?

19 MR. OPPENHEIMER: Objection  
20 to form.

21 A. It's not either/or and the question does  
22 not include all the different kinds of trading  
23 that I might have had in mind.

24 Q. Okay. So you reference exchanges and  
25 you say "myriad exchanges," which I understand to

1 mean many. Is that what you meant by "myriad"?

2 A. Many, yes.

3 Q. Okay. So how is XRP traded on many  
4 exchanges around the world? You've already talked  
5 about foreign currency exchange, so you don't need  
6 to repeat any of that.

7 Are there other purposes for which XRP  
8 is traded on exchanges around the world that you  
9 meant to include in this answer?

10 MR. OPPENHEIMER: Objection  
11 to form.

12 A. Actually, could you just restate the  
13 question? It was a long one.

14 Q. Yeah. I'm not asking about foreign  
15 currency trading. We've already talked about  
16 that.

17 In your description of XRP's  
18 acceptability --

19 A. Uh-huh.

20 Q. -- and your reference to it being traded  
21 on many exchanges around the world, what other  
22 purposes -- for what other purposes is XRP traded  
23 besides foreign currency exchange?

24 MR. OPPENHEIMER: Objection  
25 to form.

1           A.    If I could be clear, I was not asked to  
2   opine on those subjects and I do not offer an  
3   opinion.

4           Q.    Okay. Do you have an understanding,  
5   even if you're not offering an opinion, of why XRP  
6   might be traded if it's not being used in a  
7   foreign currency exchange transaction?

8           A.    You know --

9                       MR. OPPENHEIMER: Objection  
10           to form; calls for speculation.

11                    You can answer.

12           A.    I could speculate, but that would not be  
13   of any use to the court.

14           Q.    Well, it might be of use to me in  
15   helping understand and I understand the caveat  
16   that you're speculating. You're not prohibited  
17   from speculating as long as you indicate that's  
18   what you're doing.

19                    Is your answer that XRP is traded on  
20   many exchanges around the world, does that also  
21   include people who buy XRP for investment  
22   purposes?

23                    MR. OPPENHEIMER: Objection  
24           to both the instruction, if there is  
25   one, and -- and the question.

1                   You can answer.

2                   THE WITNESS: Right. I'm  
3                   thinking about it.

4           A. Yes, there are people who hold XRP as a  
5           store of value.

6           Q. As investors. Is that a fair summary?

7           A. As --

8                   MR. OPPENHEIMER: Objection;  
9                   mischaracterizes.

10                  You can answer.

11          A. As a store of value.

12          Q. All right. It sounds like that's all  
13          you're going to say. So let me -- let me ask my  
14          question a little bit differently.

15                 Assume for the purpose of this question  
16          there are three buckets for purposes of which  
17          people purchase XRP. One is foreign currency  
18          exchange. We're not going to talk about that.  
19          One is purchasing for goods and services. We're  
20          not going to talk about that. We're going to talk  
21          about the store of value. Is that -- was that the  
22          term you used a minute ago?

23          A. That's the term I used.

24          Q. Okay. So we're going to talk about the  
25          bucket for store of value.

1           You believe that there are people that  
2           purchase XRP because it's a good store of value.  
3           Is that fair?

4                           MR. OPPENHEIMER:   Objection  
5                           to the form.

6                           You can answer.

7           A.    I do not have an opinion and I say  
8           nothing about XRP as a -- in that context in my  
9           report and I have not thought -- it's just not  
10          something I'm prepared to discuss.   It's not part  
11          of my report.

12          Q.    All right.

13          A.    And it's not something I'm prepared to  
14          discuss.

15          Q.    This may be my misunderstanding and not  
16          anything that you've said or not said today, so I  
17          want to take responsibility for that.

18                   But you say XRP is traded on a myriad  
19                   exchanges and that's one reason it should be  
20                   considered a currency.   And so I'm asking you  
21                   whether you, in reaching that conclusion, whether  
22                   you considered people who purchased XRP solely  
23                   because it's a store of value, in other words an  
24                   investment, in rendering an opinion that it should  
25                   be considered a currency.

1 MR. OPPENHEIMER: Objection

2 to the form.

3 A. I did not. Let's be clear. What I say  
4 is it can be traded on myriad exchanges. What I  
5 considered was where can it be traded. I did not  
6 consider who's trading it for what purposes.

7 Q. Okay. So the purpose is beside the  
8 point?

9 A. That's correct.

10 Q. All right. Thank you for that  
11 clarification.

12 Do you have an opinion about whether  
13 bitcoin should be considered currency?

14 A. No.

15 Q. Do you know whether there's any debate  
16 among economists whether bitcoin should be  
17 considered a currency?

18 MR. OPPENHEIMER: Objection

19 to form.

20 A. I have not delved into it.

21 Q. I'm sorry, is that a yes or a no? I  
22 just want to know whether you're aware.

23 MR. OPPENHEIMER: Objection.

24 You can answer.

25 A. I am aware that economists have opined.

1 Q. Okay. Thank you.

2 MR. MOYE: This is probably  
3 a good place for a lunch break if  
4 that's okay with you guys.

5 MR. OPPENHEIMER: Sure.

6 THE WITNESS: Sure.

7 THE VIDEOGRAPHER: Okay.

8 Going off the record at 12:29.

9 (Whereupon, a luncheon recess  
10 is taken.)  
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1 A F T E R N O O N S E S S I O N

2 THE VIDEOGRAPHER: Okay.

3 Back on the record at 1:23.

4 BY MR. MOYE:

5 Q. Professor Osler, before we go on, I'd  
6 like to sort of go back for a second to something  
7 we discussed earlier in the day.

8 Do you remember me asking you about  
9 whether there was a hierarchy of functions of  
10 money between --

11 A. Yes.

12 Q. -- the method of -- means of exchange,  
13 store of value, and unit of account?

14 Are you familiar with an economist named  
15 Michael Woodford --

16 A. Yes.

17 Q. -- at Columbia University?

18 A. I know -- I'm familiar with Michael  
19 Woodford.

20 Q. Okay. Are you familiar with his book,  
21 Interest and Prices: Foundations of a Theory of  
22 Monetary Policy?

23 A. No, I'm not familiar with the book.

24 Q. Okay. If -- do you know whether he is  
25 one of the economists that believes that money's

1 function as a unit of account is the most  
2 important criteria in its definitions?

3 MR. OPPENHEIMER: Objection  
4 to form.

5 A. I don't know that any economists make  
6 that statement.

7 Q. You're not denying that he's made such a  
8 statement, are you?

9 MR. OPPENHEIMER: Objection.

10 Q. You're just saying you're not aware of  
11 it?

12 MR. OPPENHEIMER: Objection.

13 A. That's correct. I'm not denying that  
14 Michael Woodford made that statement.

15 Q. Okay. You are saying you're not aware  
16 of it so you never considered -- had to consider  
17 it, is that right?

18 MR. OPPENHEIMER: Objection.

19 You can answer.

20 A. There's two parts to that and I need to  
21 disentangle them.

22 Q. All right. So, to clarify, since you  
23 weren't -- you're not denying that he made such a  
24 statement, but you're not aware that he -- whether  
25 or not he's made such a statement, correct?

1 A. That is correct.

2 Q. And because you're not aware of it,  
3 you've never had the occasion to consider whether  
4 you would agree or disagree with that statement if  
5 made by Professor Woodford, is that right?

6 MR. OPPENHEIMER: Objection.

7 A. I'd just like to highlight, my opinion  
8 did not ask me about the hierarchy of functions.  
9 It's not considered in my report. I'm not aware  
10 of a consensus on a hierarchy of functions. It's  
11 just not something I'm -- that's in my opinion at  
12 all.

13 Q. Fair enough. So let's return to page 8  
14 of your report, paragraph 18.

15 So previously I was asking what you  
16 meant or intended by some of the statements about  
17 XRP serving various functions of money. I'd like  
18 to now ask questions about your sources.

19 So for the previous -- for the statement  
20 we've been talking about previously,  
21 "Acceptability: XRP can be traded on myriad  
22 exchanges around the world."

23 What's the source of your understanding  
24 that XRP can be traded on many exchanges around  
25 the world?

1 MR. OPPENHEIMER: Objection

2 to form.

3 You can answer.

4 A. There was no -- so I -- I -- I couldn't  
5 place the source for that. It's just sort of  
6 everywhere.

7 Q. I want to focus on the fact that you say  
8 "XRP can be traded on myriad exchanges around the  
9 world."

10 Those are your words, correct?

11 A. Uh-huh.

12 Q. Counsel didn't tell you to use those  
13 words, right?

14 A. That's attorney --

15 MR. OPPENHEIMER: Objection.

16 I instruct you not to discuss the  
17 substance of communications with  
18 counsel.

19 Q. Okay. So we can't presume one way or  
20 the other whether anyone instructed you to pick  
21 those words, choose those words?

22 MR. OPPENHEIMER: Objection

23 to the form.

24 A. I -- what I specified is that we cannot  
25 assume one way or the other that counsel

1 instructed me to specify those words.

2 Q. Okay. But you chose those words. Can  
3 we agree on that?

4 A. I chose those words.

5 Q. Okay. So you must have had some source,  
6 correct?

7 A. (No verbal response.)

8 Q. Can you tell us about any source other  
9 than counsel where you might have learned or  
10 formed the conclusion that XRP can be traded on  
11 many exchanges around the world?

12 MR. OPPENHEIMER: Objection.

13 You can answer.

14 A. I don't -- don't remember the source for  
15 that information.

16 Q. Okay. How about the timing? So you  
17 wrote this report or signed this report in October  
18 of 2021 and your -- your statement is in the  
19 present tense.

20 So was that your understanding of  
21 when -- of the fact that XRP could be traded in  
22 October of 2021 on many exchanges around the world  
23 or, as an alternative, is it possible you were  
24 thinking historically that maybe XRP had been  
25 traded on many exchanges around the world?

1 MR. OPPENHEIMER: Objection

2 to form.

3 A. Was I thinking about at the time versus  
4 historically?

5 Q. Yes.

6 A. I was thinking about -- the intention of  
7 my opinion is to say that -- let me just see it.  
8 "Can be traded" is to refer to the present.

9 Q. Is XRP traded on more exchanges in 2021  
10 than in 2020 or less?

11 MR. OPPENHEIMER: Objection

12 to form.

13 A. I don't make any statement about that in  
14 my opinion.

15 Q. Do you have any understanding?

16 A. I do not, no.

17 Q. Okay. So your statement "units of XRP  
18 can be accessed anywhere one finds an internet  
19 connection," do you have a source for that  
20 statement? Source of your understanding. Not --  
21 not a source for the particular statement, but a  
22 source for your understanding.

23 MR. OPPENHEIMER: Objection

24 to form.

25 A. Yeah. My under -- to me, that was

1 intuitively obvious.

2 Q. All right. How about XRP is stored in  
3 wallets and how much it cost for an on-ledger  
4 electronic repository? You do have a footnote  
5 there.

6 Can you clarify your source for that  
7 statement about XRP wallets?

8 MR. OPPENHEIMER: Objection  
9 to form.

10 A. A clarification in the sense of what?

11 Q. Yeah. Is this where you got that  
12 information?

13 A. Yes.

14 Q. Or is this just one of many sources that  
15 you may have consulted?

16 MR. OPPENHEIMER: Objection  
17 to form.

18 A. I got the specific prices from this  
19 source.

20 Q. Okay. So your understanding about  
21 "Wallet security is high because ledgers are  
22 maintained on many independent servers around the  
23 world and updated frequently."

24 Can you tell us where you gained your  
25 understanding of that fact or assertion?

1           A.    That follows from the nature of the XRP  
2 ledger.

3           Q.    And how did you learn about the XRP  
4 ledger? From which source?

5           A.    I read --

6                       MR. OPPENHEIMER: Objection  
7 to form.

8                       You can answer.

9           A.    I learned about the XRP ledger in the  
10 XRP -- the -- the white paper on the voting  
11 protocol procedure that's used to verify  
12 transactions on the XRP ledger.

13          Q.    All right. And how about limited  
14 supply? "Long-term supply of XRP is limited to  
15 the 100 billion already in existence. No  
16 additional units can be created without changing  
17 the XRP ledger itself."

18               What's the -- what's your source of your  
19 information for that understanding?

20          A.    That was -- that's just on the Ripple  
21 website. That's everywhere.

22          Q.    Okay. Professor Osler, would it be fair  
23 to say, generally, if not specifically, that most  
24 of your understanding of what XRP is and how it  
25 functions and how it can be used was gained during



1 this litigation from materials published or  
2 provided by Ripple?

3 MR. OPPENHEIMER: Objection  
4 to form.

5 A. I couldn't say.

6 Q. Did you know very much about XRP before  
7 you became an expert in this case?

8 A. As I said, I did not.

9 Q. Did you have sources other than your  
10 review for this case to learn about XRP and how  
11 it's used and how it can function?

12 MR. OPPENHEIMER: Objection  
13 to form.

14 A. I -- you know, I listed all the sources  
15 here. I don't have them all fresh in my mind, so  
16 I just really couldn't say.

17 Q. I understand and this is not a memory  
18 test for any particular fact.

19 But you did indicate that you thought  
20 there were some sources that you cited, but they  
21 were one of among several that you could have  
22 cited. So I'm trying to find out if statements  
23 about XRP wallets and statements about the  
24 durability or creation of XRP, whether the sources  
25 you would have consulted to learn that information

1 must have come from Ripple.

2 MR. OPPENHEIMER: Objection  
3 to form.

4 A. No.

5 Q. Were there third-party sources you  
6 consulted to learn about Ripple?

7 MR. OPPENHEIMER: Objection.  
8 You can answer.

9 A. Some of these are just intuitively  
10 obvious from the nature of the -- of XRP.  
11 Durability.

12 Q. How about limited supply? I think  
13 that's what I was asking before we got into this  
14 line of questions. "Long-term supply of XRP is  
15 limited to the 100 billion already in existence."

16 I'm not saying that's wrong. I'm just  
17 saying how do you know or how did you learn that  
18 fact?

19 A. I don't remember the precise source for  
20 that particular fact. It's all over the web.

21 Q. Okay. And I understand that caveat.  
22 What I am asking is, would you agree with me that  
23 it is more likely than not that the sources on the  
24 web that you consulted in order to learn this  
25 information were most likely sources from Ripple?

1 Like postings or information that Ripple gave --  
2 Ripple gave to another publication.

3 MR. OPPENHEIMER: Objection  
4 to the form.

5 A. I would not agree.

6 Q. Okay. Do you think it's more likely  
7 than not that the information in here about XRP  
8 comes from third parties than that it comes from  
9 Ripple?

10 MR. OPPENHEIMER: Objection  
11 to the form.

12 A. That's the reverse of the previous  
13 question, so I don't have an opinion.

14 Q. All right. Would I be correct that you  
15 had no way of independently verifying -- from  
16 whatever source you learned this information about  
17 XRP, you wouldn't have any way to independently  
18 verify whether there's only 100 billion XRP in  
19 existence?

20 MR. OPPENHEIMER: Objection  
21 to form.

22 A. So in my function of bringing the  
23 understanding from the academic community, general  
24 consensus understanding, to bear on the facts of  
25 the case, I have taken the hundred billion of XRP

1 that is discussed very commonly whenever XRP comes  
2 up online as a fact.

3 Q. Okay. So without overstating or putting  
4 words in your mouth, is it fair to say that what  
5 you learned about XRP that did not come from  
6 counsel came from your review of sources on the  
7 internet?

8 MR. OPPENHEIMER: Objection  
9 to form; mischaracterizes testimony.

10 A. I've said that I have taken the hundred  
11 billion dollar limit as a fact from different  
12 things I've read.

13 Q. I agree with that and I'm not -- I'm not  
14 trying to change your answer. I'm asking you  
15 about the whole corpus of information that you  
16 learned about XRP which you applied to the  
17 consensus from various economists.

18 If you didn't get it from counsel, did  
19 you get it from the internet?

20 MR. OPPENHEIMER: Objection  
21 to form.

22 A. I downloaded information that is  
23 available on the internet.

24 Q. All right. As you sit here today, do  
25 you have any way to know what merchants have

1 actually accepted XRP as a medium of exchange for  
2 goods or services?

3 MR. OPPENHEIMER: Objection  
4 to the form.

5 A. Do you mean for individual specific  
6 transactions do I know whether merchants have  
7 accepted XRP?

8 Q. No. I'm trying to clarify an earlier  
9 point. You said you're aware of a number of  
10 merchants that might be willing to accept XRP.  
11 They can accept XRP.

12 A. Uh-huh.

13 Q. So I'm asking you a subset question.

14 Do you know, even if a merchant is  
15 willing to accept XRP, have they actually done so?

16 MR. OPPENHEIMER: Objection  
17 to form.

18 You can answer.

19 A. Oh, that was not required for forming my  
20 opinions and I -- I can't say that I called any of  
21 those merchants up and said, gosh, have you  
22 actually done it?

23 Q. All right. Would the same thing be true  
24 about unit of account?

25 MR. OPPENHEIMER: Objection

1 to form.

2 Q. Whatever opinion you've offered about  
3 who or the type of entities use XRP as a unit of  
4 account, you didn't have a reason or occasion to  
5 independently verify that?

6 MR. OPPENHEIMER: Objection

7 to form.

8 A. I have downloaded information from the  
9 web about the extent of transactions on the  
10 ledger. And I have taken that as factual.

11 Q. Okay.

12 A. And -- which means that because on -- as  
13 I've said, when it -- XRP is used as a medium of  
14 exchange on the ODL letter -- ledger, it is being  
15 used as a unit of account.

16 Q. Okay.

17 A. So I do have -- that is substantial.

18 Q. That was your source?

19 A. I'm sorry?

20 MR. OPPENHEIMER: Objection.

21 Q. You just described a source --

22 A. Not an individual source.

23 Q. Not an individual source. Those are  
24 your sources of information.

25 MR. OPPENHEIMER: Objection

1 to the form.

2 A. Again, that's -- there was no source  
3 listed. There was a type of information listed in  
4 my statement.

5 Q. Okay. All right.

6 (Whereupon, exhibit is received  
7 and marked SEC Osler Deposition Exhibit 2  
8 for identification.)

9 BY MR. MOYE:

10 Q. I'd like to hand you -- so we'll make  
11 this quick. I apologize. I should have handed  
12 this to you earlier since we talked about it. I  
13 just want to get your identification.

14 THE REPORTER: Exhibit 2 for  
15 identification.

16 MR. MOYE: Exhibit 2 for  
17 identification.

18 Q. So Exhibit 2 is a printout with Federal  
19 Reserve of St. Louis at the top and the title is  
20 "Functions of Money - The Economic Lowdown Podcast  
21 Series" dated August 9th, 2012.

22 Okay. Professor Osler, do you believe  
23 this is the transcript of the podcast that we  
24 discussed earlier about the functions of money  
25 from the Federal Reserve of St. Louis?

1           A.    I'm willing to take it as such since you  
2 represent it as such.

3           Q.    Does it look to you like it's the same  
4 thing you consulted in preparing your report?

5           A.    I --

6                         MR. OPPENHEIMER:  Objection  
7 to form.

8                         You can answer.

9           A.    Okay.  To be honest, I don't remember  
10 what it looked like.

11           Q.    All right.  That's fine.  You can put  
12 that aside.

13                         Now we're going to look at something  
14 new.

15                         MR. MOYE:  Do you mind  
16 handing one to the court reporter as  
17 well?  Thank you so much.

18                         (Whereupon, exhibit is received  
19 and marked SEC Osler Deposition Exhibit 3  
20 for identification.)

21                         THE REPORTER:  Exhibit 3 for  
22 identification.

23                         MR. MOYE:  Okay.

24 BY MR. MOYE:

25           Q.    Professor Osler, I've handed you what's



1       been marked as -- sorry -- as Exhibit 3. At the  
2       top is an NBER Working Paper Series. The title is  
3       "Is Bitcoin a Real Currency?" And it's by David  
4       Yermack and the date is December 2013.

5               Do you see that?

6           A.    I do.

7           Q.    Are you familiar with the National  
8       Bureau of Economic Research?

9           A.    I am.

10          Q.    Is this an -- an entity that you were  
11       associated with earlier in your career?

12          A.    I was.

13          Q.    So what is National Bureau of Economic  
14       Research?

15          A.    It is an association of economists.  
16       There are centers like this all around the world.

17          Q.    Is this a think tank? an academic group?  
18       a social gathering? How would you describe this  
19       association of -- of economists?

20                       MR. OPPENHEIMER: Objection

21               to form.

22          A.    It's a group of economists. I think  
23       that's the best way to describe it.

24          Q.    Does it have clients?

25          A.    Not that I'm aware.

1 Q. Okay. Is it a foundation? Like does it  
2 receive contributions to funds its work?

3 MR. OPPENHEIMER: Objection  
4 to form.

5 A. You know, I have not even looked into  
6 the funding of the NBER and I wouldn't know for  
7 sure.

8 Q. Is it a for-profit business?

9 A. It's not a for-profit business.

10 Q. Does it do expert consulting the way  
11 some other consulting groups do?

12 MR. OPPENHEIMER: Objection  
13 to form.

14 A. Does the NBER do expert consulting?  
15 I -- I couldn't say for sure.

16 Q. At the time you were there, did it do  
17 expert consulting?

18 A. I wasn't aware that it did at the time I  
19 was there.

20 Q. Okay. And, again, I'm not saying it  
21 does. I'm just trying to figure out whether NBER  
22 is a for-profit, for-client --

23 A. Uh-huh.

24 Q. -- research organization.

25 All right. So this is a paper by David

1 Yermack.

2 Are you familiar with Professor Yermack?

3 A. I have occasionally read some of his  
4 material, but I couldn't place exactly what he  
5 says.

6 Q. If you turn over one page --

7 THE REPORTER: But I  
8 couldn't place his?

9 THE WITNESS: Exactly what  
10 he has to say.

11 Q. Okay. If you turn over one page to  
12 where the article begins, it shows that he -- that  
13 David Yermack is in the Department of Finance at  
14 the New York University Stern School of Business.

15 Do you see that?

16 A. I do.

17 Q. Okay. Are you familiar with the Stern  
18 School of Business at NYU?

19 A. Yes.

20 Q. Okay. Have you ever had occasion to see  
21 this article before I put it in front of you  
22 today?

23 A. I have not read it currently.

24 Q. Sorry. Let me clarify.

25 So my question is: Have you seen it

1 before?

2 A. I can't say for sure.

3 Q. Okay. So the title is "Is Bitcoin a  
4 Real Currency?" The date, as I said, was in  
5 December of 2013. It's not a lengthy article, but  
6 you can feel free, if you need to, to flip to  
7 different parts of it. But I want to ask you  
8 questions about page 2. So I'd like to direct  
9 your attention there.

10 MR. OPPENHEIMER: You should  
11 read as much of the paper as you need  
12 to in order to be able to answer the  
13 question.

14 MR. MOYE: So are you  
15 directing her to read it now?

16 MR. OPPENHEIMER: No, I'm --  
17 I'm instructing her that --

18 THE WITNESS: I'm choosing  
19 to read it.

20 MR. OPPENHEIMER: -- to the  
21 extent she needs to read it in order  
22 to answer your questions, she is able  
23 to do so.

24 MR. MOYE: That's fine.

25 A. So because you wanted me to go to page

1 2, I'm reading what comes just right before.

2 Q. Sure. That's fine.

3 (Pause)

4 A. I was able to see what Mr. Yermack has  
5 to say on page 2.

6 Q. Okay. I'm going to ask you a couple of  
7 questions about the final paragraph on page 2, so  
8 I'm glad you had a chance to -- to look at that.

9 Okay. In the middle of the final  
10 paragraph on page 2, Mr. Yermack makes this -- or  
11 Professor Yermack makes the following statement:  
12 "However, I argue in the sections below that  
13 bitcoin performs poorly as a unit of account and  
14 as a store of value."

15 Do you see that?

16 A. I see that.

17 Q. Did I read that, hopefully, very  
18 correctly?

19 A. You did.

20 Q. Okay. Do you agree with that statement  
21 by Professor Yermack?

22 MR. OPPENHEIMER: Objection  
23 to form.

24 A. I haven't read the substance of what --  
25 and he says "in the sections below," but, anyhow,

1 so I haven't read it, so I couldn't say one way or  
2 the other.

3 Q. Okay. So just to clarify, you can't say  
4 whether you agree with it, is that right?

5 MR. OPPENHEIMER: Objection  
6 to form.

7 You can answer.

8 A. I can't say without reading his analysis  
9 and thinking about it independently.

10 Q. Okay. So that's a two-part answer. I  
11 get that.

12 Would the same thing be true about  
13 whether you disagree with it? You could not say  
14 whether you disagree with it without studying it  
15 further and thinking on your own?

16 MR. OPPENHEIMER: Objection  
17 to form.

18 You can answer.

19 A. That's correct.

20 Q. Okay.

21 A. That follows logically.

22 Q. Okay. So what if I changed the wording  
23 of that sentence that I read you slightly. What  
24 if, hypothetically, Professor Yermack or someone  
25 else had said that XRP performs poorly as a unit

1 of account and as a store of value? As you sit  
2 here today, would you be in a position without  
3 further review or study to either agree or  
4 disagree with that statement?

5 MR. OPPENHEIMER: Objection  
6 to form.

7 You can answer.

8 A. My opinion is about whether it functions  
9 as a store of value and a unit of account. So I  
10 don't have an opinion as to whether it performs,  
11 you know, qualitatively one way or the other. I  
12 just highlight that it does perform those  
13 functions.

14 Q. Okay. So that's -- I think that's an  
15 important qualification, understanding of your  
16 opinions. So thank you for making that.

17 You're not saying that XRP performs well  
18 as a unit of account or a store of value, correct?

19 MR. OPPENHEIMER: Objection  
20 to the form.

21 You can answer.

22 A. I do not quant -- I do not provide any  
23 qualification in that sense, whether it performs  
24 well or poorly. I do not. I simply state that it  
25 does.

1 Q. Okay. Now, another sentence I'd like to  
2 ask you about is the final sentence in this  
3 paragraph. It says "Therefore, bitcoin's value is  
4 almost completely untethered to that of other  
5 currencies, which makes its risk nearly impossible  
6 to hedge for businesses and customers and renders  
7 it more or less useless as a tool for risk  
8 management."

9 Did I read that correctly, I hope?

10 A. I see that statement.

11 Q. Okay. Do you have any basis to either  
12 agree or disagree with Professor Yermack's  
13 statement about bitcoin?

14 MR. OPPENHEIMER: Objection

15 to the form.

16 A. I'm thinking about -- yeah, I don't want  
17 to take you down arcane academic paths, okay? So  
18 I -- I certainly don't have an opinion about this  
19 one way or the other. It's not my purpose, in my  
20 opinion, to assess whether risk management is  
21 involved with XRP one way or the other.

22 Q. Okay. So I think you anticipated my  
23 next question.

24 So I'm going to ask you, if,  
25 hypothetically, Professor Yermack or someone else



1 had said that XRP's value was almost completely  
2 untethered to that of other currencies, and then  
3 finishes the same sentence like Professor Yermack  
4 did, would you be in a position to agree or  
5 disagree with that statement without further study  
6 and analysis?

7 MR. OPPENHEIMER: Objection

8 to the form.

9 A. My opinion does not address -- does  
10 not -- I was not asked to address that question in  
11 my opinion. I was asked to address whether it  
12 performs the function of money. So since I was  
13 not asked to address whether it performs -- and --  
14 and, as you know, the consensus of economists is  
15 not that money needs to be a tool for risk  
16 management.

17 Q. Okay. Do you understand -- do you have  
18 an understanding of the -- of the term "time  
19 series volatility"?

20 MR. OPPENHEIMER: Objection

21 to form.

22 A. I do understand that term.

23 Q. What does that term mean to you?

24 A. It -- time series is a -- is something  
25 that changes over time. And the volatility is the

1 extent to which it changes over time.

2 Q. So if something exhibits a high time  
3 series volatility, would it be correct to say it  
4 shows significant volatility over time?

5 MR. OPPENHEIMER: Objection  
6 to form.

7 You can answer.

8 A. There's no definition here for  
9 "significant."

10 Q. Okay. He says "very high time series  
11 volatility."

12 What do you understand that to mean?

13 MR. OPPENHEIMER: Objection  
14 to form.

15 A. There's no benchmark. Where are we  
16 exactly, by the way?

17 Q. So we're still on page 2.

18 A. Okay.

19 Q. But I'll refer you to a figure in -- in  
20 a minute.

21 A. Uh-huh. And his high -- he says --  
22 there. "High time series volatility."

23 You know, we don't have any specifics  
24 here and -- so what was your question again?

25 Q. My question was: What does that

1 statement mean to you?

2 MR. OPPENHEIMER: Objection

3 to form. I think asked and answered.

4 But you can answer.

5 A. So he seems to have a benchmark in mind  
6 for high versus low, but it's not here so I  
7 couldn't tell you what his benchmark is. And he's  
8 talking about the extent to which something  
9 changes over time. That's time series volatility.

10 Q. Okay. Let's go to page 7, a section  
11 that begins "Bitcoin's weaknesses as a  
12 currency..." And there's two paragraphs and the  
13 second paragraph continues from the bottom of page  
14 7 to the top of page 8. I'm happy to let you look  
15 at those because I have a couple of questions  
16 about these paragraphs.

17 (Pause)

18 Q. Figure 3 is on page 13.

19 A. Thank you.

20 So I've read the two paragraphs.

21 Q. Okay. So I'd like to direct your  
22 attention to the last sentence in the first -- in  
23 the paragraph in the middle of page 7 where  
24 Professor Yermack says "Bitcoin imposes large  
25 risks on its owners, because it has excessive

1       volatility and fails to exhibit correlation with  
2       the behavior of other currencies."

3               Do you see that?

4           A.    I see that.

5           Q.    Okay. As you sit here today, are you in  
6       a position to either agree or disagree with that  
7       statement without further study and consideration?

8           A.    I would --

9                       MR. OPPENHEIMER:  Objection.

10                      You can answer.

11                     THE WITNESS:  Okay.

12           A.    There's a lot of terms in here that are  
13       not defined. And in terms of the implied  
14       definition of risk, which is -- so there's two --  
15       it's a very complicated sentence. There's an  
16       awful lot going on in here. But I couldn't agree  
17       with it in part because some of the terms are not  
18       defined.

19           Q.    Okay. For the same reason are you  
20       unable to disagree with it because you don't know  
21       what he meant and you haven't considered it?

22                       MR. OPPENHEIMER:  Objection.

23                      You can answer.

24           Q.    There's going to be an objection. You  
25       may as well wait for it.

1           A.    It's impossible to respond to the  
2   sentence one way or the other because terms are  
3   not reasonably defined.

4           Q.    That's what I'm getting at.  Without  
5   knowing what he studied and what he meant, you  
6   can't say he's right, but you also can't say he's  
7   wrong.  Is that fair?

8                       MR. OPPENHEIMER:  Objection  
9                       to the form.

10          A.    That's correct, you can't.  When -- when  
11   the statement is not really meaningful, you can't  
12   say one way or the other.

13          Q.    All right.  So hypothetically, if  
14   Professor Yermack or someone else said the same  
15   thing about XRP, that XRP imposes large risks on  
16   its owners because it has excessive volatility and  
17   failed to exhibit correlation with the behavior of  
18   other currencies, without additional study or  
19   knowing more about the definition of those terms,  
20   are you in a position to agree with that  
21   statement?

22                       MR. OPPENHEIMER:  Objection  
23                       to form.

24          A.    So the fact is that XRP is used as a  
25   store of value, as I said earlier.  So the

1       volatility, whatever it is, is not considered  
2       excessive by the people that hold it.

3           Q.    How do you know what the holders of XRP  
4       think or don't think about volatility?

5           A.    They're willing to hold it.

6           Q.    Do you know whether they're comfortable  
7       with volatility?

8           A.    That's irrelevant.

9                       MR. OPPENHEIMER:  Objection  
10       to form.

11                      THE WITNESS:  Oopsy.

12          A.    That's irrelevant.

13          Q.    Do you know whether they have  
14       opportunities to sell?

15          A.    That's not relevant.

16          Q.    You assume they do?

17          A.    That's not relevant.

18          Q.    Okay.  As you sit here today, are you  
19       able to disagree with a statement that "like  
20       bitcoin, XRP imposes large risks on its owners  
21       because it has excessive volatility and fails to  
22       exhibit correlation with the behavior of other  
23       currencies"?

24                     MR. OPPENHEIMER:  Objection  
25       to form.

1           A.    Here's something I could agree to.  
2           Dollars impose large risks on their owners because  
3           they have volatility. I could agree to that.

4           Q.    You could agree to that.

5                   All right. Let's look at Figure 3.  
6           It's on page 13. So I understand that you did  
7           not create this table and that should be --  
8           that's baked into your answer.

9                   My question is hypothetical. Assuming  
10          that the data that Professor Yermack relies upon  
11          is correct and that he has accurately portrayed it  
12          here in Figure 3 showing the volatility of bitcoin  
13          compared to other major currencies, do you agree  
14          with Professor Yermack that bitcoin is more  
15          volatile than gold, British pound, Japanese yen  
16          and euro and the other currencies here?

17                   MR. OPPENHEIMER: Objection  
18                  to the form.

19          Q.    Am I reading that correctly?

20          A.    That is what the figure indicates.

21          Q.    Okay. And as you sit here today, do you  
22          have any reason to think that he's wrong about his  
23          calculation or what it shows?

24                   MR. OPPENHEIMER: Objection.

25          A.    I'd like to highlight that these

1 volatilities are calculated for the period January  
2 1, 2013 to November 29th, 2013. So it's important  
3 to ask whether these would still be true today.

4 Q. Okay. But as far as the data in 2013,  
5 do you have any reason to -- do you have any  
6 reason to dispute that the data or his conclusions  
7 are incorrect?

8 MR. OPPENHEIMER: Objection  
9 to form.

10 A. I see the chart and I see that it's  
11 there.

12 Q. Okay. So now we're moving into another  
13 hypothetical, but I want you to continue looking  
14 at that chart if it's helpful to you.

15 Do you understand how to create a  
16 volatility comparison the way Professor Yermack  
17 appears to have done? In other words, could you  
18 do that yourself for various currencies?

19 A. When --

20 MR. OPPENHEIMER: Objection  
21 to form.

22 A. According to what's listed in the table  
23 description, I could do that.

24 Q. Okay. And from time to time in your  
25 professional career, have you done that? Have you



1 examined volatility of various currencies?

2 A. Yes.

3 Q. Okay. So do you have any understanding  
4 as to how XRP's volatility as a currency compares  
5 to other currencies?

6 A. I do. In my rebuttal to Mr. [REDACTED] I  
7 have numbers. And I -- the XRP volatility from  
8 his source, an article that he sourced, the  
9 appropriate number -- there -- there were numbers  
10 at different horizons. And I took the number for  
11 the one-minute horizon and then I compared that to  
12 some data I happened to have for euro/dollar. And  
13 the comparison was XRP volatility at the  
14 one-minute horizon was .1 percent; and volatility  
15 of the dollar, the euro/dollar exchange rate, was  
16 point -- was one -- 20 percent as large.

17 Q. Why did you choose the one-minute  
18 horizon for that comparison? Why not a longer  
19 period of time?

20 MR. OPPENHEIMER: Objection.

21 You can answer.

22 A. I chose the one-minute horizon because  
23 on the ODL platform, the ideal time horizon would  
24 be about five seconds, which is how long anyone  
25 holds XRP for one of those transactions and one

1 minute was the -- the closest I could get to that  
2 five-second time horizon.

3 Q. Now, is it your testimony today that no  
4 one holds XRP for longer than one minute?

5 A. No.

6 Q. Okay. Fair enough.

7 I think I've exhausted my questions  
8 about Figure 3 and this article. If you don't  
9 have anything to add to your prior answers, we  
10 can put this aside.

11 We've looked at one article comparing --  
12 studying whether one cryptocurrency, bitcoin, is  
13 money or can function as money.

14 THE REPORTER: I can't hear  
15 you. Is what?

16 MR. MOYE: Is money or can  
17 function as money.

18 Q. Are you aware of any other articles --  
19 and I think you said that you had seen the Yermack  
20 article that you looked at at least one time in  
21 the past.

22 A. To clarify --

23 MR. OPPENHEIMER: Objection.

24 THE WITNESS: I'm sorry.

25 MR. OPPENHEIMER: Mischarac-

1                   terizes.

2                   You can answer.

3           A.    Yeah. I did not say I have seen it. I  
4    said I may have seen it among the other articles  
5    that cross my path.

6           Q.    Okay. Thank you for that clarification.

7                   Are you aware of other articles by  
8    academics discussing or analyzing whether  
9    cryptocurrencies function as money or currency?

10          A.    I couldn't name them.

11          Q.    Okay. So this is about, as best you can  
12   recall, when you -- when you saw or learned of  
13   these articles.

14                   Were you aware of these articles before  
15   you wrote your report?

16          A.    I -- there's a premise here that I  
17   haven't supported.

18          Q.    Then I -- I misunderstood and I  
19   apologize. I thought you said you were aware that  
20   there were articles by academics discussing or  
21   analyzing whether cryptocurrencies function as  
22   money.

23          A.    I -- I have been aware that they exist,  
24   but I have not pursued them.

25          Q.    Okay. That's the basis for my question:

1 Your awareness of their existence.

2 Were you aware of their existence before  
3 you wrote your initial report?

4 A. To be honest, I don't remember when I  
5 first became aware that such papers were in  
6 existence. I'm aware that there's a lot of  
7 literature on cryptos and exactly when I  
8 learned -- saw the -- a paper on the subject, I  
9 couldn't tell you.

10 Q. Okay. Can we assume, then -- well, let  
11 me put it this way.

12 Would you agree with me that your  
13 paper -- your opinion doesn't cite any other  
14 academic papers analyzing cryptocurrencies and  
15 whether they function as money? Would you agree  
16 with me on that?

17 A. That's correct.

18 Q. Okay. Is there a reason why there's no  
19 discussion or literature review in your opinion  
20 about what other economists had thought about  
21 whether cryptocurrencies function as money?

22 MR. OPPENHEIMER: Objection  
23 to form.

24 A. Again, restate your question.

25 Q. I'll try. It's probably a very bad

1 question.

2 Why didn't you look in preparing your  
3 report and cite something? Why wasn't it of  
4 interest to you whether other academics had looked  
5 at a similar question to the one that you were  
6 looking at in preparing your report?

7 MR. OPPENHEIMER: Objection

8 to form.

9 A. I don't know.

10 Q. So let me take that one step further.  
11 You've been very clear, and I appreciate that,  
12 that your statements about the properties and  
13 functions for currency, you're attempting to  
14 convey a consensus among other economists,  
15 especially academics, is that correct?

16 A. I attempted to convey a consensus about  
17 the functions of currency and, in addition, the  
18 attributes that are helpful in a currency, yes.

19 Q. Okay. So my question is: Can you tell  
20 us why you might not have -- why you were not  
21 interested in knowing whether there was a  
22 consensus among academics or economists about  
23 whether cryptocurrencies have the same functions  
24 of money or currency?

25 MR. OPPENHEIMER: Objection

1 to the form.

2 A. I don't know how to put this. I was  
3 asked whether XRP fulfills the functions of money  
4 and I know what those are and I addressed those  
5 questions. And knowing what the functions are and  
6 knowing the properties of XRP, which are facts, I  
7 could connect the dots. And so I did not find the  
8 need for anything. And, to be honest, at this  
9 point -- well, "to be honest" is an inappropriate  
10 way to put it.

11 Let's be clear. At this point,  
12 cryptocurrencies are new enough that there is  
13 extremely unlikely to be a consensus of anything.  
14 It takes a very long time for a broad consensus to  
15 develop.

16 Q. Okay. Thank you. You can put that --  
17 you've already put Exhibit 3 aside.

18 Let's go back to your report. So I want  
19 to go to the section where you discuss Ripple's  
20 ODL product. So I'd like you to go to page 13 and  
21 paragraph 29.

22 Beginning in paragraph 29, you de -- you  
23 define the Global Payments Initiative as GPI.

24 Do you see that?

25 A. I do, yes.

1 Q. And then the next sentence you say  
2 "However, GPI remains slow relative to Ripple's  
3 ODL system because transfers through GPI still  
4 involve chains of correspondent banks."

5 Do you see that?

6 A. I do.

7 Q. What's the source of your comparison?

8 A. I -- the specific source. I believe I  
9 learned about how GPI works through the SWIFT  
10 website and that allows me to understand how it  
11 works and draw comparisons.

12 Q. The SWIFT website defines the Global  
13 Payments Initiative, correct?

14 A. Yes.

15 Q. Okay. So in this -- in this sentence we  
16 read, you are comparing the speed of GPI to  
17 Ripple's ODL system.

18 Did the -- did the website, the SWIFT  
19 website you looked at, did that analyze the speed  
20 of ODL?

21 MR. OPPENHEIMER: Objection  
22 to form.

23 A. Why would it?

24 Q. Well, you cite here on number 42, that  
25 appears to be a source for your statement "GPI

1 remains slow relative to Ripple's ODL system."

2 So I'm asking you whether this source  
3 that you cite actually compared Ripple's ODL  
4 system to other transfers on GPI.

5 MR. OPPENHEIMER: Objection.

6 You can answer.

7 A. I -- you know, I don't recall  
8 specifically that detail about that article.

9 Q. Okay. Do you think it's possible that  
10 you are citing the SWIFT -- the article about the  
11 SWIFT transaction banking system, whether that's  
12 the source for your information about SWIFT, but  
13 you have drawn the conclusion that Ripple is  
14 slow -- that GPI is slow relative to -- to ODL?

15 MR. OPPENHEIMER: Objection  
16 to form.

17 Q. In other words, how do you know that  
18 Ripple's ODL system is faster than the GPI system?

19 A. Because I know that the GPI system works  
20 through corresponding banking networks.

21 Q. Okay. So that's the SWIFT side.  
22 How do you know how fast ODL is?

23 A. I know that the transactions on ODL  
24 happen in about five seconds and that, in general,  
25 with electronic transfers, they can be done far



1 faster than can ever be hoped for on the SWIFT  
2 network.

3 Q. Okay. Let me be clear about this  
4 because this may help us in other questions going  
5 forward.

6 Is the source for your information about  
7 the speed and other properties of ODL --

8 A. Uh-huh.

9 Q. -- is it Ripple or is it some other  
10 party not associated with Ripple?

11 MR. OPPENHEIMER: Objection  
12 to the form.

13 A. I have highlighted here my sources, and  
14 beyond that, since it's been a few months since I  
15 compiled it -- my sources are listed here.

16 Q. All right. Have you ever tested an ODL  
17 transaction to see how fast it goes?

18 A. I think we've -- I've explained that I  
19 have not.

20 Q. Okay. How do you know --

21 A. In any case, I couldn't -- right.

22 Q. Okay. So how do you know how fast an  
23 ODL transaction happens? Didn't you learn that  
24 from your association with Ripple or its counsel?

25 MR. OPPENHEIMER: Objection

1 to form.

2 A. I'm sorry. I can't speak to what I've  
3 learned from counsel --

4 Q. Okay.

5 A. -- because that's attorney privilege.

6 But beyond that, there's no reason to  
7 believe that I got that from Ripple here. I have  
8 sources. I have used my intelligence. And that's  
9 all that was -- I have non-Ripple sources here.  
10 There's my own intelligence and that's sufficient.

11 Q. Okay. So where in your report do you  
12 indicate how quickly an ODL transaction happens?

13 A. I -- the -- the five seconds is  
14 indicated -- I can't remember where. I -- I don't  
15 remember the paragraph, but the five seconds is --  
16 is in there somewhere.

17 Q. Well, I'm not saying you're wrong, but  
18 that's kind of an important element of your  
19 report.

20 A. Okay. So --

21 Q. Can you -- can we take a moment and try  
22 to find it?

23 A. Sure. Here we go. Here we go. Here we  
24 go.

25 (Pause)

1 A. Yes. Here we go.

2 Q. Okay. What page are you looking at?

3 A. Let's see. What do I say? Well, I  
4 say -- in paragraph 54, I say "The XRP ledger's  
5 verification protocol requires just a few seconds,  
6 less than 1/10th of a minute of the 10 minutes  
7 required by proof of work."

8 In my rebuttal to [REDACTED] I specify the  
9 average of five seconds, though I should say that  
10 when I looked up the numbers a couple days ago,  
11 the time was down to four seconds.

12 Q. All right. So thank you for clarifying.

13 So would it be fair to say that your  
14 source for your description of ODL speed in  
15 paragraph 29 is most likely the same as your  
16 source in paragraph 54?

17 MR. OPPENHEIMER: Objection  
18 to the form; mischaracterizes.

19 A. In paragraph -- I'm sorry, say that  
20 again.

21 Q. Yeah.

22 A. Paragraph?

23 Q. Your first -- your first comment on ODL  
24 speed that I noticed was in paragraph 29.

25 A. 29. There we go. That's the one.

1 Okay. Let's take a look.

2 So it would be fair to say I was taking  
3 the five seconds reported as the average  
4 transaction time by Ripple, which, of course, can  
5 be verified because all these transactions are  
6 recorded and one can watch them happen online.

7 So that I was taking the five seconds  
8 reported by Ripple in that source and comparing it  
9 to the multiple days required or the -- the slow  
10 process for correspondent banking chains reported  
11 in there.

12 Q. Okay. Thank you for clarifying that.

13 And the source for paragraph 54 is  
14 Footnote 78, correct? It's XRP's ledger overview.

15 A. Let's be clear. The source I cited for  
16 one sentence in paragraph 54 is the ledger  
17 overview, which, as I just mentioned, can be  
18 verified in -- online in -- you can just watch the  
19 transactions happen and there are online verifiers  
20 of these things.

21 Q. And have you done that, Professor Osler?

22 A. I did not do it at the time. I took the  
23 Ripple report of five seconds as a fact knowing  
24 that it was on a ledger that could be verified.

25 Q. You had high confidence, is that fair?

1 MR. OPPENHEIMER: Objection

2 to form.

3 THE REPORTER: I'm sorry,

4 you had what?

5 Q. You had high confidence that what was on

6 the Ripple website was accurate?

7 A. I had --

8 MR. OPPENHEIMER: Objection

9 to form.

10 A. I recognized that anything about speeds

11 would be in -- directly comparable to information

12 readily available on the web on a daily and, in

13 fact, intraday basis so that Ripple was unlikely

14 to -- no one would be likely to misstate those

15 numbers.

16 Q. Why don't we look at paragraph 39 on

17 pages 16 and 17.

18 A. It's a long day.

19 Q. I know. It is a long day, so let me

20 know if you need a break. It's not an endurance

21 test.

22 A. Thank you. I can go on for a little

23 longer, for sure.

24 Q. Okay. I don't need you to read it out

25 loud, but could you summarize the points you're

1 trying to make in paragraph 39 as it relates to

2 Ripple -- I'm sorry, as it relates to XRP?

3 MR. OPPENHEIMER: Objection

4 to form.

5 A. Oh, so let me -- let's start. I'll read

6 paragraph 39 and then you can ask me the question.

7 Okay?

8 Q. Fair enough.

9 (Pause)

10 A. Okay. Go -- go right ahead.

11 Q. Okay. Could you help me understand?

12 What is the point you're trying to make in

13 paragraph 39?

14 A. It's a bridge paragraph between the

15 concepts before and the concepts after. I

16 remember that from constructing it. Let me

17 identify the concepts before. Right.

18 Right. So the paragraphs before were

19 highlighting the obstacles for progress in

20 reducing the cost of remittances through

21 traditional payments pro -- channels and

22 especially banking channels and clarifying that

23 they're unlikely to go away soon.

24 But then I was turning to places where

25 there has been progress. So this is a bridge

1 paragraph between one and the other.

2 Q. All right. So paragraph 29 refers to a  
3 figure you created -- well, you either created or  
4 obtained from another source -- the average cost  
5 of remittances between 13 of the G20 countries?

6 A. This is --

7 MR. OPPENHEIMER: Objection.

8 You can answer.

9 THE WITNESS: I'm sorry.

10 A. The figure is taken from a World Bank  
11 report in March of 2021.

12 Q. Okay. Just showing the average cost  
13 of -- the average cost of remittances in various  
14 countries, correct?

15 A. That's correct.

16 Q. Okay. My question for you, Professor  
17 Osler, is, does this figure have anything to do  
18 with XRP? In other words, were any of these  
19 countries using XRP in a -- in a way that would  
20 have shown up in any of these graphs during the  
21 time period shown in this -- in this figure?

22 MR. OPPENHEIMER: Objection  
23 to form.

24 A. So your question had two parts: One,  
25 does it have anything to do with XRP and then you

1 specified a way in which it might have something  
2 to do with XRP.

3 So there was a message from the chart  
4 related to XRP, but it has nothing to do with what  
5 you were trying to impute would have been the  
6 message.

7 Q. Tell me the message from the chart then.

8 A. The message is that costs are exorb --  
9 very high around the world; that, as I've  
10 highlighted, reducing the cost of remittances is a  
11 world goal because -- world goal because poor  
12 people worldwide are losing -- in 2020 it was 35  
13 billion, I believe, out of their total remittance  
14 payments of 540 million to low- and middle-income  
15 countries and that's because, as I report, the  
16 average cost is 6.7 percent.

17 So these costs are high and that is the  
18 point of this -- this chart, to highlight that the  
19 costs are very high and need to come down and to  
20 set the stage for discussing Ripple.

21 Q. Okay. You said these costs are high by  
22 country and these are average costs, correct?

23 A. (No verbal response.)

24 Q. So does this chart show anything about  
25 whether a particular consumer in a particular



1 country has access to lower-cost money remittance  
2 services or is this a conglomerate of a much  
3 larger set of data?

4 MR. OPPENHEIMER: Objection;  
5 very compound.

6 A. Yes. Yeah. Why don't you pick that  
7 apart.

8 Q. Is XRP being used in any of these  
9 countries during the time that the -- shown by the  
10 figure?

11 MR. OPPENHEIMER: Objection  
12 to form.

13 A. I believe it was being used in Jap -- it  
14 may or may not have been. I couldn't say with  
15 absolute certainty and I -- yeah. I couldn't say  
16 with absolute certainty.

17 Q. Okay. So assuming it was being used in  
18 at least one of these countries, Japan, during the  
19 times shown, did use of -- the use of ODL,  
20 Ripple's product ODL, did it have any effect,  
21 either positive or negative, in the average cost  
22 of remittances for that country?

23 MR. OPPENHEIMER: Objection  
24 to form.

25 Q. In other words, was it significant?

1 MR. OPPENHEIMER: Objection

2 to form.

3 A. So I -- I couldn't say --

4 Q. Okay.

5 A. -- based on the information available to  
6 me.

7 Q. Okay. Let's look at paragraph 42.

8 What's your understanding of the period  
9 of time that Ripple's ODL product was commercially  
10 available?

11 A. It was -- I believe it was formally  
12 introduced in 2019.

13 THE REPORTER: 2018?

14 THE WITNESS: '19.

15 THE REPORTER: Thank you.

16 Q. Did Ripple have a money transfer product  
17 which used XRP prior to 2019?

18 A. It had a product called xRipple or  
19 something like that, or xRemit. I -- it had a --  
20 a name previously and I do -- yeah, it -- there  
21 was a product with a name prior to the name "ODL."

22 Q. Are you familiar with the term "xRapid?"

23 A. Yes, that sounds familiar.

24 Q. What is xRapid?

25 A. It -- I couldn't tell you exactly

1 because my real focus has been on ODL. It was the  
2 predecessor product to ODL.

3 Q. And was that available commercially  
4 before 2019?

5 A. To my knowledge, it was.

6 Q. And did that have any effect, positive  
7 or negative, in the average exchange rates --  
8 average remittance -- I'm sorry, let me get the  
9 right term -- the average cost of remittances in  
10 any of the countries shown in your report?

11 MR. OPPENHEIMER: Objection  
12 to form.

13 A. So I think it's important to keep in  
14 mind the broad context of my opinion. My opinion  
15 is that Ripple has a product that is disruptive to  
16 traditional technologies and needs -- and that it  
17 has a -- a very familiar challenge to economists,  
18 which is that it needs to create a network, but  
19 without -- the network is what will attract more  
20 customers.

21 So I have clarified that Ripple is at  
22 the early stages of an attempt to get past these  
23 things and is using traditional strategies  
24 recommended by economists.

25 So -- so your question does not seem

1 responsive to my report.

2 Q. Exactly. I'm testing your assertion  
3 that Ripple's in the very -- very early stages.

4 If, hypothetically, Ripple had a  
5 product, whether called ODL or xRapid, that was  
6 commercially available prior to 2019, would that  
7 have been an important fact to consider in your  
8 analysis and -- and opinion that ODL is well  
9 suited to meet the needs of money transmitters  
10 around the world?

11 MR. OPPENHEIMER: Objection  
12 to the form.

13 A. No, because Ripple was a different  
14 product -- I mean xRapid was a different product.

15 Q. How did it differ from ODL?

16 A. I don't -- you know, I -- this is  
17 something where I don't know the specifics, but  
18 there's a specific about ODL that I do know that's  
19 important, that ODL provides guaranteed rates and  
20 that that was specific to ODL.

21 Q. How does -- how does ODL provide  
22 guaranteed rates?

23 A. The mechanism, it's patented and secret.

24 Q. What can you tell us about it? I mean,  
25 we have a confidentiality order in this case.

1 What -- what's the secret sauce that Ripple does  
2 for ODL?

3 MR. OPPENHEIMER: Objection  
4 to form.

5 A. I don't mean it's secret in the sense  
6 that I can't give it away. It's secret in the  
7 sense that I don't have it.

8 Q. You don't have it. Okay.

9 Let's look at paragraph 44.

10 MR. OPPENHEIMER: Rob, we  
11 don't have to do it now, but if we  
12 could take a break soon, that would  
13 be great.

14 MR. MOYE: Good idea. Very  
15 soon.

16 Q. In the middle of paragraph 44, you state  
17 "Customers licensing ODL from Ripple use XRP to  
18 make cross-border transactions and cross-currency  
19 payments 'in as little as three seconds.'" And  
20 then there's a citation at paragraph -- I'm sorry,  
21 at Footnote 68 to a Ripple website.

22 Do you see that?

23 A. I do.

24 Q. Okay. Am I correct that this was your  
25 source for that statement that ODL allowed for

1 payments in as little as three seconds?

2 A. Yes.

3 MR. MOYE: Okay. We can  
4 take a break now.

5 THE WITNESS: Okay.

6 THE VIDEOGRAPHER: Okay.

7 Going off the record at 2:27.

8 (Whereupon, a recess is taken.)

9 THE VIDEOGRAPHER: Okay.

10 Back on the record at 2:46.

11 BY MR. MOYE:

12 Q. Okay. Professor Osler, I'd like to  
13 direct your attention to paragraph 44 of your  
14 initial report. The part that starts at the  
15 bottom of 18 and continues over to the top of page  
16 19.

17 You introduce a new topic and you say  
18 "For the reasons explained below, the ODL system  
19 is superior to existing cross-border payment  
20 systems and is therefore a viable competitor."

21 THE REPORTER: Excuse me.

22 Could you slow down? The ODL system

23 --

24 Q. -- "is superior to existing cross-border  
25 payment systems and therefore a viable

1 competitor."

2 And then you introduce a number of  
3 things that you say ODL does better than the  
4 competition.

5 Do you see that? You say it's faster;  
6 it's more transparent; it's less costly.

7 Did I read that right?

8 A. Correct. Faster, more transparent.

9 Q. Okay. We've talked a little bit about  
10 how you came to an understanding of ODL speed.  
11 I'd like to ask you now how you came to an  
12 understanding that ODL was less costly than  
13 existing payment systems.

14 What can you tell me?

15 MR. OPPENHEIMER: Objection  
16 to form.

17 A. Oh, beyond my report?

18 Q. No. I'd like you to tell me what you  
19 say in your report about how it compares to cost.  
20 Like where in your report do you compare the cost  
21 of ODL to existing payment systems?

22 A. I do not provide an explicit comparison.

23 Q. Okay. So I see in paragraph 54 in your  
24 discussion of the speed of the XRP ledger, you do  
25 compare the cost of an XRP transaction to a

1 bitcoin transaction.

2 Do you see that?

3 A. Uh-huh.

4 MR. OPPENHEIMER: Objection.

5 Q. Is there any place in your report where  
6 you show or describe a comparison between the cost  
7 of an ODL transaction and the cost of another  
8 cross-border payment transaction?

9 A. There is no explicit comparison.

10 Q. So what was your understanding about  
11 that comparison? How did you know that ODL was  
12 less costly than the other systems?

13 A. I -- I was basing it on the World Bank  
14 report and the -- the high cost of those and the  
15 fact that ledger transactions are so inexpensive.

16 Q. Were you comparing apples to apples?

17 MR. OPPENHEIMER: Objection.

18 Q. There are no -- do you think -- you  
19 thought you knew the cost of the traditional bank  
20 payment systems and you had some information about  
21 ODL and what it did or could do.

22 How did you know what it would cost the  
23 consumer?

24 MR. OPPENHEIMER: Objection

25 to form.



1           A.    So let's see how I can phrase this. All  
2   right. So the -- the -- so the 10.7 percent cost  
3   for -- all right. I was basing it on the  
4   extremely low cost of the actual transaction and  
5   the fact that if you reduce the cost of the actual  
6   transaction within and eliminate, say, the -- the  
7   chain of correspondent banks and the very high  
8   costs associated with transaction fees at  
9   correspondent banks, if you -- and similar  
10  qualifications for Western Union that you reduce  
11  this one cost, that becomes less costly.

12          Q.    So your prior chart we looked at  
13  comparing the cost of transactions among --  
14  remit -- remittances among various countries,  
15  those are average costs, correct?

16          A.    Those are average costs.

17          Q.    And within each country, some are going  
18  to be -- some sources are going to be high and  
19  some sources are going to be lower, correct?

20          A.    Correct.

21          Q.    Okay. So when you say that ODL -- let  
22  me find your words. When you say it's "superior  
23  to existing cross-border payment systems and  
24  therefore a viable competitor," are you saying  
25  it's better than the average or are you saying

1       it's better than the -- than all of the existing  
2       payment systems?

3                       MR. OPPENHEIMER:   Objection  
4                       to form.

5           A.    I -- let's see.   I had in mind that it  
6       was better than the average and very much better  
7       than some of the individuals.

8           Q.    Did you think it was better than Western  
9       Union?

10          A.    Yes.

11          Q.    Did you think it was better than  
12       MoneyGram?

13          A.    I think it -- I wasn't thinking  
14       specifically about individual -- Western Union is  
15       a very big name.   I wasn't thinking about  
16       MoneyGram.   I was thinking that it's far less  
17       costly than the banking systems and less costly  
18       than the post office, which is at 8 percent.

19          Q.    So how did you know what exactly it  
20       cost?   Like, what was your -- what was your  
21       understanding of what a -- an ODL transaction  
22       would cost the consumer?

23                       MR. OPPENHEIMER:   Objection  
24                       to form.

25          A.    I -- so my understanding was based on

1 some of the facts I provided, which is that it is  
2 a -- a dir -- it's a digital transfer and I was  
3 basing it on the cost of digital transfers.

4 Q. Did you know anything about what the  
5 cost to a consumer would be when you wrote this  
6 report?

7 MR. OPPENHEIMER: Objection  
8 to the form.

9 Q. I should say, did you know anything more  
10 specific about what the cost to a consumer would  
11 be for using ODL when you wrote this report?

12 MR. OPPENHEIMER: Objection  
13 to form.

14 A. The cost would vary according to the  
15 remittance service providers.

16 Q. Well, when you say that ODL would be  
17 lower, what did you think someone might have to  
18 pay to send \$200 overseas?

19 A. Remember, one here -- one concept here  
20 is absolute and one concept is relative. Lower  
21 does not presume a specific number, which would be  
22 absolute.

23 Q. Did you have a -- a number in mind?

24 A. I was highlighting that the efficiency  
25 of the ODL process and the speed and the

1 transparency of it reduced the overall costs of  
2 the remittances and it reduces it and the -- so I  
3 was not pinpointing a number.

4 Q. Okay. In your chart of the average cost  
5 of remittances, are those costs to the consumer,  
6 the person who's sending money, or are they costs  
7 to someone else, like the institution?

8 A. These costs are the joint costs to  
9 sender and receiver for remittances of the  
10 standard amount looked at in the literature, which  
11 is \$200 or the equivalent.

12 Q. In an ODL transaction, who pays the cost  
13 of using XRP?

14 MR. OPPENHEIMER: Objection.

15 A. The cost to use XRP, the -- the specific  
16 fee, is, oh, something like one-thousandth of a  
17 cent in U.S. -- as measured in U.S. dollars or  
18 it's technically -- it's measured in XRP and it's  
19 one-thousandths of 1 percent of an XRP or possibly  
20 smaller.

21 And that cost -- I couldn't tell you for  
22 sure. It's -- there's going to be transactions  
23 between the remittance service providers and  
24 Ripple, the market maker. And whether the cost is  
25 paid by the service providers or Ripple, I -- I do

1 not know.

2 Q. Can we agree that the consumers don't  
3 buy the XRP in the ODL transaction?

4 A. That is correct.

5 MR. OPPENHEIMER: Objection.

6 Q. They're not the customers for purposes  
7 of the cost of XRP, is that right?

8 MR. OPPENHEIMER: Objection.

9 A. So we'd have to be very careful about  
10 the definition. Ripple refers to its clients as  
11 the XRP -- as the ODL -- institutions that use  
12 ODL.

13 Q. And those institutions are the ones that  
14 purchase the XRP, correct, not the consumer?

15 MR. OPPENHEIMER: Objection.

16 A. The -- the institutions -- you know,  
17 ownership of cryptocurrency is very complicated  
18 and I couldn't tell you the legalities of who  
19 technically owns what, when, in there and so I --  
20 I couldn't tell you.

21 Q. Okay. So let's take a step back from  
22 buying and selling XRP, look at the transaction as  
23 a whole, the money moving through the ODL system.

24 A. Right.

25 Q. Aren't there other costs involved to the

1 transmitters and -- and the recipient?

2 A. There's a lot of costs in remittances.  
3 There's time. There's uncertainty. There can  
4 be -- there can -- there are -- in the usual  
5 foreign exchange wholesale market, there are  
6 bid/ask spreads. The nature of ODL is uncertain,  
7 so I couldn't say that. One thing I can say is  
8 that ODL does -- has this patent about a feature  
9 of the product that eliminates slippage, which  
10 is -- comes up a lot in SEC discussions.

11 Q. Aren't there costs on exchanges --

12 MR. OPPENHEIMER: Objection.

13 Q. -- associated with ODL transactions?

14 MR. OPPENHEIMER: Objection  
15 to form.

16 Q. Don't you have to pay exchanges to get  
17 money in one currency or to sell money in another  
18 currency?

19 MR. OPPENHEIMER: Objection.

20 A. I referred to that already in the figure  
21 of point -- oh, I've forgotten how many zeroes,  
22 but it's something like one one-thousandths of a  
23 percent or possib -- it's probably smaller.  
24 Perhaps 100-thousandths of a percent of XRP that  
25 is paid in the process for an XRP transaction.

1 Q. Right. For the use of the XRP.

2 But what are the costs to acquire the  
3 currency that's actually being exchanged? ODL's  
4 the bridge. But someone still needs to purchase  
5 the currency to make it available to the other  
6 person, right?

7 MR. OPPENHEIMER: Objection

8 to form.

9 A. I think I've been clear that there is a  
10 cost to a transaction in XRP and that is this very  
11 tiny, tiny fraction of an XRP.

12 Q. All right. So it's your testimony that  
13 the only cost associated with a service provider  
14 using ODL would be the tiny, tiny cost of XRP, is  
15 that right?

16 MR. OPPENHEIMER: Objection;

17 mischaracterizes testimony.

18 A. Exactly. I have not said that it's the  
19 only. I have said that that is the transaction  
20 cost that I'm aware of in terms of a fee for  
21 making a transaction.

22 Q. Do you understand that there are fees  
23 associated with a foreign currency exchange that  
24 still has to happen as part of the remittance  
25 process?

1           A.    I --

2                           MR. OPPENHEIMER:  Objection.

3                           THE WITNESS:  Oh, I'm sorry.

4                           MR. OPPENHEIMER:  You can

5                           answer.

6           A.    I understand that.  I've been very  
7 careful here because I am not aware that ODL  
8 char -- charges -- ODL has a specific kind of  
9 product and I am not aware that they charge any  
10 additional fees for transactions.

11          Q.    Okay.  So let's be clear about that.

12                           Are you aware of any other costs to  
13 using ODL other than the XRP fee that you've  
14 already described?

15                           MR. OPPENHEIMER:  Objection

16                           to form.

17          A.    I've mentioned with -- with any  
18 transaction, there are costs of waiting, though in  
19 this case, those costs are very small and --  
20 well...

21                           So let's say in terms of specific fees?

22                           No, I'm not aware of any others.

23                           (Whereupon, exhibit is received

24                           and marked SEC Osler Deposition

25                           Exhibit 10 for identification.)



1 BY MR. MOYE:

2 Q. Let's take a look at what's been marked  
3 as Exhibit 10.

4 Are you familiar with Exhibit 10?

5 A. I may have seen it but I don't remember  
6 seeing it.

7 Q. Exhibit 10 is Ripple publication  
8 entitled "Free Working Capital with On-Demand  
9 Liquidity." It is referred to at -- on page 18 of  
10 your report at Footnote 68.

11 A. Okay. So I did see it.

12 Q. Is this one of your sources for  
13 understanding how the ODL transaction system  
14 works?

15 MR. OPPENHEIMER: Objection.

16 A. It is something I looked at.

17 Q. Something you cited, right? Does that  
18 mean you relied on it?

19 A. I'll take your word for it.

20 MR. OPPENHEIMER: Objection.

21 Q. Please look at paragraph 44, Footnote  
22 68.

23 A. All right. Let me just see.  
24 Forty-four.

25 Yes. There you go.

1           Q.    Okay.  So on the third page of Exhibit  
2   10, there's a diagram that says "How On-Demand  
3   Liquidity Works."

4                   Do you see that?

5           A.    I do.

6           Q.    And in that first sentence, it talks  
7   about bridging "two currencies in as little as  
8   three seconds..."

9                   Do you see that?

10          A.    Yes.

11          Q.    Is that the same quote you used in  
12   paragraph 44?

13          A.    I would guess so.

14          Q.    Okay.  Can you tell me if there's  
15   anything in Exhibit 10 that talks about the costs  
16   of an On-Demand Liquidity transaction?

17                   MR. OPPENHEIMER:  Counselor,  
18                   there appears to be a video that's  
19                   part of the pages not included here.

20                   Do you have a copy of that?

21                   MR. MOYE:  I'm not -- I  
22                   don't have a copy and can't play it.

23                   MR. OPPENHEIMER:  Okay.

24                   MR. MOYE:  So -- but if you  
25                   tell me it's a video, I will --

1 MR. OPPENHEIMER: And I'm  
2 just --

3 MR. MOYE: I'm not going to  
4 agree.

5 MR. OPPENHEIMER: -- looking  
6 at the top of the -- one, two,  
7 three -- fourth page and I see the --  
8 the video play box.

9 MR. MOYE: The 1 -- the  
10 1:46?

11 MR. OPPENHEIMER: Yeah.

12 MR. MOYE: Okay.

13 BY MR. MOYE:

14 Q. So if you turn the page over from "How  
15 On-Demand Liquidity Works" to "Why Use XRP?"

16 A. Uh-huh.

17 Q. I don't see a video play bar, but I do  
18 see the statement "XRP is ideally suited for  
19 global payments because it is quicker, less  
20 costly, more scalable and sustainable."

21 Do you see that?

22 A. And it compares to the digital assets.

23 Q. All right. But is this your source for  
24 your understanding that use of ODL is less costly  
25 than any other digital asset?

1 MR. OPPENHEIMER: Objection

2 to the form.

3 A. Let me remind you that I have described  
4 the very, very low transaction fees for XRP and  
5 I've also described how it is faster than other  
6 digital currencies include -- and certainly faster  
7 than bank transfers, Western Union, and post  
8 office transfers.

9 And -- and the -- so -- right. So I've  
10 highlighted the costs -- some of the costs in  
11 question that I considered.

12 Q. All right. Well, I'm trying to find in  
13 your report anything different than we've already  
14 discussed about the cost of an ODL transaction and  
15 I'm not seeing a description of the costs to  
16 the -- either the ultimate consumer or the service  
17 provider, but I'm happy to be corrected about  
18 that.

19 Do you believe in your initial report  
20 there was any discussion of the ODL process and  
21 the cost associated with any or each part of it?

22 MR. OPPENHEIMER: Objection

23 to the form.

24 A. As I had said earlier, I never put out a  
25 specific cost number because I was talking about

1 comparative costs.

2 Q. Okay. So in your understanding of an  
3 ODL transaction, is it your understanding that ODL  
4 transactions involve the exchange of XRP into  
5 another currency?

6 MR. OPPENHEIMER: Objection  
7 to form.

8 A. I lost track at the beginning.

9 Q. Yeah.

10 Is it your understanding that in an ODL  
11 transaction, there's an exchange of XRP on  
12 another -- into another currency?

13 MR. OPPENHEIMER: Objection.

14 A. I would say yes.

15 Q. Where does that exchange take place?

16 MR. OPPENHEIMER: Objection  
17 to form.

18 A. That's really not possible to answer.

19 Q. Does it take place on an exchange  
20 somewhere?

21 MR. OPPENHEIMER: Objection  
22 to form.

23 A. The ODL?

24 Q. As part of the ODL transaction, you take  
25 pesos, you get XRP, you exchange the XRP for yen.

1 Let's say that.

2 Someone has to -- you have to buy  
3 that -- someone is buying that yen, correct?  
4 Where do they get that yen?

5 MR. OPPENHEIMER: Objection  
6 to form.

7 You can answer.

8 A. All right. So the -- so the ODL  
9 platform -- on the ODL platform, Ripple is the  
10 market maker. Ripple sources the foreign  
11 currencies and -- and trades in and out of XRP  
12 versus foreign currencies either from its own  
13 balance sheet or by going to the many crypto  
14 exchanges where XRP is exchanged -- exchanged for  
15 currencies.

16 Q. So are you aware that there -- wouldn't  
17 there be fees for using an exchange to exchange  
18 XRP for another currency?

19 MR. OPPENHEIMER: Objection.

20 You can answer.

21 A. This is a hypothetical. In general,  
22 there are fees to trade on exchanges.

23 Q. In your report, do you anywhere take  
24 that into account in evaluating the cost of using  
25 ODL either to the consumer or to the service

1 provider?

2 A. For this kind of purpose, those fees are  
3 generally so very, very small that for this kind  
4 of purpose, they're usually not an important part  
5 of the overall cost.

6 Q. Okay. What's your basis for your  
7 understanding that the fees of the exchange of XRP  
8 for a real currency, a fiat currency, is very,  
9 very small?

10 MR. OPPENHEIMER: Objection  
11 to form.

12 A. That statement is quite broad. I've  
13 been discussing specifically exchange fees.

14 THE REPORTER: Exchange?

15 THE WITNESS: Exchange fees.

16 Q. Yeah.

17 What is the basis for -- for your  
18 understanding that the exchange fees, when XRP is  
19 exchanged for a fiat currency, are very small?

20 MR. OPPENHEIMER: Objection  
21 to form.

22 Q. How do you know that?

23 A. I am aware of exchange fees on -- I  
24 study the trading process, so I am aware of  
25 exchange fees in many contexts.

1 Q. Yeah. So I'm focusing on the context  
2 where you say you have no personal experience.  
3 The XRP exchange for --

4 A. Uh-huh.

5 Q. -- some sort of -- pesos are exchanged  
6 for XRP and then the XRP is exchanged for yen or  
7 some Australian dollars or something else.

8 On those two exchange transactions, do  
9 you agree with me that there are likely to be fees  
10 associated with those transactions?

11 A. I haven't --

12 MR. OPPENHEIMER: Objection  
13 to form.

14 You can answer.

15 THE WITNESS: Whoops.

16 A. I have agreed that there are likely to  
17 be fees. I have also asserted that those fees are  
18 likely to be small.

19 Q. Okay. So what I'm asking you is: How  
20 do you know what the fees for using XRP to  
21 purchase fiat currency are if you have no personal  
22 experience with that?

23 A. Again, as I highlighted, it's my  
24 experience studying markets as a whole that I  
25 bring to bear here. And in many years of studying



1     how markets function, the cost of exchange fees  
2     have consistently been ignored to be perfectly  
3     honest. They are so small.

4           Q. All right. I'm going to look at another  
5     document. I want to think about whether I need to  
6     come back to this or move on, but let me show you  
7     Exhibit 11.

8                                 (Whereupon, exhibit is received  
9     and marked SEC Osler Deposition Exhibit  
10    11 for identification.)

11                                THE WITNESS: Here you go.

12                                THE REPORTER: Thank you.

13     BY MR. MOYE:

14           Q. Exhibit 11 is a printout with the title  
15     "The Environmental Impact: Cryptocurrency Mining  
16     versus Consensus."

17                                Do you see that?

18           A. Yes, I do.

19           Q. The author is David Schwartz?

20           A. Yes.

21           Q. And do you recognize David Schwartz as a  
22     Ripple employee?

23           A. I do.

24           Q. Okay. So you cite Exhibit 11 on page 22  
25     of your report at Footnote 80.

1 A. All right.

2 Q. Do you see that?

3 A. Yes, I do.

4 Q. Okay. And you cite this article for the  
5 proposition that "The XRP Ledger requires less  
6 than .002 percent of the computing power required  
7 for proof-of-work."

8 Do you see that?

9 A. I do.

10 Q. Where in this -- are you able to tell me  
11 where in Exhibit 11 you obtained that information?

12 A. There's a problem at the top of the  
13 third page of my exhibit where there's a lot of --  
14 there's some stuff that's overwritten that's  
15 important to me.

16 Q. All right. So I apologize for the print  
17 job, but this is how we were able to find it.

18 Do you know what's under there and  
19 whether that's what you were referring to?

20 A. I -- okay. I think I can help you out.  
21 I think if you take -- yes, I see it. If you take  
22 1/57,000. So it says here that XRP is 57,000  
23 times more efficient to get the reverse, what  
24 fraction of the bitcoin power does it take to do  
25 an XRP transaction, which is the way I expressed

1 it. You take 1/57,000 and that should give you a  
2 number very close to .002.

3 Q. Okay. So thank you for explaining how  
4 you derived that number.

5 Is it fair to say that your source for  
6 the computing power or the efficiency of XRP as  
7 compared to bitcoin comes directly from Ripple?

8 MR. OPPENHEIMER: Objection  
9 to form.

10 You can answer.

11 A. My source for the fact that -- that  
12 number comes from this document. My understanding  
13 of the relatively tiny resource requirements of a  
14 transaction on the Ripple Ledger compared to the  
15 bitcoin ledger comes from my understanding of the  
16 consensus mechanisms involved in both ledgers.

17 The bitcoin process for achieving  
18 consensus requires substantial computer work  
19 and -- by -- by structure. It requires  
20 substantial computer work and that will not go  
21 down as computing power increases. That will  
22 remain a big challenge for the -- it will require  
23 a lot of computer work to verify a bitcoin  
24 transaction no matter what because it's called  
25 proof of work so the work is a requirement.

1           The -- Ripple -- the XRP consensus  
2     requirement is simply a -- a voting algorithm.  
3     That's it. It's so -- it -- the fraction has to  
4     be very -- the fraction of resources used has to  
5     be very, very tiny relative to bitcoin.

6           Q.    And how did you come to learn what was  
7     involved in this consensus mechanism that you  
8     described and how bitcoin works in the blockchain  
9     and -- and Ripple? Is that something you knew  
10    before you started this case?

11          A.    I knew some of it, yes.

12          Q.    Okay.

13          A.    I did not know about the XRP in  
14     particular, but I learned that from the XRP white  
15     paper. The -- the -- a white paper written by  
16     Ripple experts on what they were doing.

17          Q.    Okay. Do you consider yourself an  
18     expert in blockchain technology?

19          A.    No.

20          Q.    Do you consider yourself an expert in  
21     how bitcoin operates?

22          A.    I have learned sufficient to make  
23     reasoned conclusions on something like this.

24          Q.    Okay. So same question about XRP. Do  
25     you consider yourself an expert in how the XRP

1 transactions work on the XRP Ledger?

2 MR. OPPENHEIMER: Objection

3 to form.

4 A. I consider myself having learned plenty

5 to make this resource comparison.

6 Q. Do you consider yourself having -- do

7 you believe you have expertise in how the XRP

8 Ledger functions?

9 MR. OPPENHEIMER: Objection

10 to form.

11 A. I have knowledge.

12 Q. My question was about expertise.

13 A. I have generated as much knowledge as

14 required to understand that blockchain

15 transactions will inherently require a lot of work

16 because of the nature of the consensus mechanism,

17 which is to require a lot of work, and that the

18 XRP ledger will not require a lot of work simply

19 because it's a few electronic signals from here to

20 there that constitute voting.

21 Q. In terms of expertise, do you believe

22 you have more or better -- a -- a greater or

23 better understanding than people who have read the

24 same sources that you have?

25 MR. OPPENHEIMER: Objection

1 to form.

2 A. I couldn't compare.

3 Q. It might be better but it might not be  
4 as good. Is that fair?

5 MR. OPPENHEIMER: Objection.

6 Q. If you can't make a comparison?

7 MR. OPPENHEIMER: Objection.

8 A. You know, this is -- I -- I'm not sure I  
9 see much meaning in this question. I'm sorry.  
10 You know, if someone else read Dickens, would they  
11 understand it better than me? They might, they  
12 might not.

13 Q. Same would be true of the XRP material?  
14 They might, they might not?

15 A. They might, they might not.

16 Q. Okay. Fair enough.

17 (Whereupon, exhibit is received  
18 and marked SEC Osler Deposition Exhibit 5  
19 for identification.)

20 THE WITNESS: Here you go,  
21 Bridget.

22 BY MR. MOYE:

23 Q. Professor Osler, please take a look at  
24 what's been marked for identification as Exhibit  
25 Number 5.

1 MR. OPPENHEIMER: I'd just  
2 note for the record the version of  
3 Exhibit 5 we've been given appears to  
4 start on what's listed as page 2, not  
5 page 1.

6 MR. MOYE: Correct. It does  
7 not have the Exhibit A cover sheet  
8 which was filed with the Court.

9 BY MR. MOYE:

10 Q. Please tell me if you recognize what's  
11 been marked as Exhibit Number 5? And you can page  
12 through it if that will help you.

13 A. I do not recognize it.

14 Q. Okay. Why don't you flip to the last  
15 page.

16 A. The signature page?

17 Q. Sure, the signature page.

18 So this is signed by someone named  
19 Lawrence Angelilli on, it looks like, March 14th  
20 of 2021. And if you go back to the first page of  
21 this declaration, Mr. Angelilli identifies himself  
22 as the executive vice president and chief  
23 financial officer of MoneyGram International.

24 Okay. So with that introduction, and  
25 you may look at it more if it would help you or

1 not, do you believe you've ever seen Exhibit 5  
2 before?

3 A. I have not seen Exhibit 5.

4 Q. Okay. Have you heard that MoneyGram,  
5 which once had a relationship with Ripple using  
6 the ODL project, stopped or withdrew from that  
7 relationship and the -- and the two companies no  
8 longer have a commercial relationship?

9 MR. OPPENHEIMER: Objection

10 to form.

11 Q. I need a yes or no, not a nod.

12 A. What is the -- so the question is do --  
13 have I heard that?

14 Q. Yes. Have you heard that?

15 A. Yes, I have heard that.

16 Q. Okay. Where did you hear that?

17 A. I don't remember.

18 Q. Okay. Just to review what you said  
19 before, I don't believe -- according to your prior  
20 testimony, I don't believe you've read any  
21 depositions in this case, is that correct?

22 A. That's correct.

23 Q. So you're -- you would not have read  
24 Mr. Angelilli's deposition in this case, is that  
25 right?



1 A. Correct.

2 Q. Okay. You said you haven't read  
3 documents regarding this litigation other than  
4 those cited -- documents specific to this  
5 litigation other than those cited in -- in your  
6 report, is that right?

7 A. That's correct.

8 Q. So you wouldn't have read any agreements  
9 between MGI, MoneyGram, and Ripple?

10 A. That's correct.

11 Q. Okay. And it sounds like you have not  
12 seen or had the opportunity to read  
13 Mr. Angelilli's declaration before?

14 MR. OPPENHEIMER: Objection;  
15 asked and answered.

16 You can answer again.

17 A. I have not seen or read this before.

18 Q. All right. Could you please take a look  
19 on page 11, paragraph 40. Take a chance -- take a  
20 moment to read that to yourself.

21 (Pause)

22 Q. Have you had a chance to read paragraph  
23 40?

24 A. I have.

25 Q. Okay. So a few caveats. Some of the

1 terms in here are technical. I don't expect you  
2 to know necessarily what MXN is or MPSI, although  
3 I believe MXN refers to Mexican pesos.

4 A. It does.

5 Q. And obviously if you've never seen this  
6 before, you wouldn't know what Mr. Angelilli's  
7 testimony was about various fees or costs. My  
8 question is related, though.

9 At any time during the -- your expert  
10 engagement, did you learn from Ripple's counsel or  
11 from any other source that in MoneyGram's  
12 experience using ODL, there were a variety of  
13 fees, significant fees, associated with  
14 MoneyGram's use of ODL?

15 MR. OPPENHEIMER: Hang on a  
16 second.

17 Counsel, do you think you could  
18 rephrase that one to avoid asking whether  
19 she learned it from counsel and just ask  
20 whether she learned it or not?

21 MR. MOYE: I'll ask two  
22 questions because both are important  
23 to me.

24 BY MR. MOYE:

25 Q. So the first question: In your expert

1 engagement, did you learn at any point that  
2 MoneyGram incurred a variety of fees which turned  
3 out to be significant for using the ODL product in  
4 its money transfer business?

5 A. I did not.

6 Q. Okay. Did you ever discuss that  
7 topic -- I'm not asking specific conversations  
8 back and forth. I'm asking a topic.

9 Did you ever discuss that topic with  
10 counsel that retained you and helped you with your  
11 report?

12 MR. OPPENHEIMER: Objection.

13 I instruct you not to answer  
14 that.

15 Q. Will you follow that instruction?

16 A. Yes.

17 Q. Okay. So let's move to paragraph 42.

18 If you could read that to yourself for a moment  
19 and let me know when you've had a chance to do so.

20 (Pause)

21 Q. Ready?

22 A. Uh-huh.

23 Q. Okay. At any point in this litigation,  
24 did you ever learn that Ripple was paying  
25 substantial subsidies to MoneyGram in order to

1 effectuate that commercial relationship so that  
2 MoneyGram would use ODL in its money transfer  
3 business?

4 MR. OPPENHEIMER: Objection

5 to form.

6 You can answer.

7 A. I -- I learned at some point that Ripple  
8 had been subsidizing MoneyGram.

9 Q. Did you learn that before or after you  
10 issued your initial report?

11 A. I -- I believe I -- I -- I knew it when  
12 I composed the report and that's -- yes.

13 Q. Okay. In discussing whether XRP -- or,  
14 I'm sorry, the ODL product is well-positioned to  
15 serve as a disruptive technology in -- in a  
16 competitive money transfer business, why did you  
17 not think it was important to acknowledge  
18 MoneyGram's prior experience with Ripple and ODL,  
19 including the -- the fees it had to pay and the  
20 subsidies it received?

21 MR. OPPENHEIMER: Objection

22 to form.

23 A. I'd like to highlight I have answered  
24 already that I was not aware of these fees. What  
25 I was confident in is that subsidies are part of

1 the normal strategy that a firm in Ripple's --  
2 with a product like Ripple's ODL needs to take  
3 according to common wisdom among economists.

4 Q. Okay.

5 A. Ripple --

6 Q. I'm sorry. I want to let you finish.

7 MR. MOYE: But could you  
8 read back -- after she's done, could  
9 you read back her answer for the  
10 sentence she just finished?

11 Q. Go ahead.

12 A. So Ripple is -- subsidies are a normal  
13 part of the recommended strategy or -- I don't  
14 know how do I put this. That among economists,  
15 disruptive innovation is a known strategy and the  
16 challenges associated with products that require  
17 networks are also widely known. And it is  
18 understood that in firms that need to establish a  
19 network, subsidies are a normal part of the  
20 initial process of getting a foothold in the  
21 market. Yes.

22 MR. MOYE: Could you read  
23 back from where I indicated the first  
24 part of her answer?

25 (Whereupon, the record was read

1 back.)

2 BY MR. MOYE:

3 Q. Did you understand that the subsidies  
4 from Ripple to MoneyGram were meant to reduce the  
5 cost borne by MoneyGram in using ODL in  
6 transactions?

7 MR. OPPENHEIMER: Objection  
8 to form.

9 A. I would say that what you just described  
10 is the definition of a subsidy in this context.

11 Q. So whether or not that's true, I'm  
12 asking about your awareness.

13 Did you know that the purpose of the  
14 subsidy was to make MoneyGram whole for costs, for  
15 additional costs that it bore, in using ODL in its  
16 money transfer business?

17 MR. OPPENHEIMER: Objection  
18 to form.

19 A. I knew that -- so let's be clear what I  
20 knew. What I knew and understood was that Ripple  
21 had paid subsidies to MoneyGram. Money is  
22 fungible, so the exact nature of what it was  
23 intended to compensate for, I -- I was not -- I  
24 did not probe.

25 Q. Okay. Any -- is there anywhere in your

1 report where you indicate that Ripple was paying  
2 subsidies to MoneyGram or any other user of ODL as  
3 part of its technology?

4 A. I did not point it out, but I believe  
5 the report was explicit that subsidies are common.

6 Q. Let's look at that.

7 A. I say -- in the discussion of network  
8 externalities --

9 Q. I'm sorry, where are you?

10 A. So I would be -- paragraph 69, somewhere  
11 in that vicinity, is where I talk about network  
12 externalities.

13 So I highlight the 50 million that  
14 Ripple -- and I phrase it as used "to seed a  
15 partnership with MoneyGram." I was aware that  
16 that was intended as a subsidy.

17 Q. Wasn't that an equity investment?

18 A. I think it took that form. Yes, that  
19 was the form it took.

20 Q. How did you -- how did you learn about  
21 that? I don't see any source cited here.

22 A. It's true. I didn't provide a source.

23 Q. You also mention "with this agreement in  
24 hand."

25 So you were aware there was an

1 agreement?

2 MR. OPPENHEIMER: Objection

3 to form.

4 Q. Am I correct that you were aware there  
5 was an agreement?

6 A. Yes, I was a -- I was aware there was an  
7 agreement.

8 Q. Did you ask for or review -- did you ask  
9 for a copy of that agreement in preparing this  
10 report?

11 A. No.

12 Q. Why not?

13 A. I read about it and that was enough.

14 Q. Where did you read about it?

15 A. In the media somewhere, and this is a  
16 place where I seem to have overlooked providing  
17 a -- a source.

18 Q. Okay. So in looking for the media to  
19 describe this agreement, did you also see media  
20 describing the dissolution of the MoneyGram and  
21 Ripple relationship?

22 MR. OPPENHEIMER: Objection

23 to form.

24 A. I was -- the exact source I couldn't  
25 pinpoint as you can tell. I was aware that that



1 agreement had dissolved.

2 Q. What was your understanding of why  
3 agreement had dissolved?

4 A. I couldn't tell you on the spot.

5 Q. Did you think it dissolved because it  
6 was too profitable?

7 MR. OPPENHEIMER: Objection.

8 Q. Too successful?

9 MR. OPPENHEIMER: Objection  
10 to form.

11 A. I -- look, I didn't probe exactly what  
12 happened there. I knew it didn't work out.

13 Q. Did you assume that it didn't work out  
14 for reasons that had nothing to do with the  
15 viability of ODL?

16 MR. OPPENHEIMER: Objection  
17 to form.

18 A. As I have said, I did not probe the  
19 reasons why it did not work out and I will clarify  
20 why not. ODL has a disruptive, innovative,  
21 impotent product, and it's going to take -- it is  
22 very challenging for such products to get a  
23 foothold in the market. And the idea that it will  
24 all happen at once and every step will work out  
25 beautifully would be unrealistic.

1           So for all I knew -- so I couldn't  
2     identify the reasons that it did not work out. I  
3     had not seen these documents and I did not probe.

4           Q.    Okay. Let me go back to the  
5     announcements about the MoneyGram/Ripple  
6     relationship.

7           As you indicated, the published reports  
8     talked about a \$50 million equity investment that  
9     Ripple made in MoneyGram. Assume for the purposes  
10    of my question to you that the other subsidies  
11    that Ripple was paying to MoneyGram were not  
12    publicly disclosed in the media, in media sources.  
13    Okay?

14           So, in other words, my question is: Did  
15    you really learn -- did you learn about other  
16    subsidies on -- online or did you learn about --  
17    or did you never learn about any other subsidies  
18    other than the \$50 million?

19                   MR. OPPENHEIMER: Objection  
20           to the form.

21           Q.    All right. That was a terrible  
22    question. Let me try again.

23           Did you learn about any other subsidies  
24    besides the \$50 million in preparing this report?

25                   MR. OPPENHEIMER: Objection

1 to the form.

2 A. At -- at some point over the last --  
3 what are we? -- four months, five months, I  
4 learned there had been some additional subsidies.  
5 I don't remember precisely when I learned it.

6 Q. Okay. So besides the \$50 million, do  
7 you think there's any other place in the -- in  
8 your report that you discuss these other  
9 subsidies -- these other subsidies to MoneyGram?

10 MR. OPPENHEIMER: Objection.

11 A. I was providing examples of Ripple's key  
12 strategic moves and this served as an example and  
13 that was sufficient for my purpose at that point.

14 Q. Were you deliberately trying to  
15 undersell the level of subsidy or did you not  
16 think it was important?

17 MR. OPPENHEIMER: Objection  
18 to form.

19 A. There was -- let's be clear. I was  
20 providing an example.

21 Q. Okay. So I guess my question would be  
22 different if the only subsidy you knew about was  
23 the \$50 million. But since I'm not clear from  
24 your answers whether you knew about those other  
25 subsidies when you wrote your report, I'm trying

1 to understand why you chose only -- why you may  
2 have chosen only to emphasize the 50 million. You  
3 said it was an example. So I'm probing to find  
4 out.

5 Did you think there would have been  
6 anything wrong in indicating that there were other  
7 subsidies on top of that?

8 MR. OPPENHEIMER: Objection

9 to the form.

10 Q. Would that have been inconsistent with  
11 your report?

12 MR. OPPENHEIMER: Same

13 objection.

14 A. I'd like to highlight that an important  
15 part of a clear document is conciseness and my  
16 choices very often have to do with being concise.

17 Q. Fair enough.

18 In -- in reaching your conclusion that O  
19 -- that Ripple and its ODL product are  
20 well-positioned to be a disruptive technology and  
21 be successful in the money transfer business, did  
22 you consider whether Ripple had competitors in  
23 this business and whether they were also using  
24 blockchain technology to compete in this space?

25 A. I am aware that Ripple had a couple --

1 has a few competitors and I listed two of them and  
2 so I'm aware of it.

3 Q. What kind of cryptocurrency do they use  
4 in the space? Do you know?

5 A. No, I don't.

6 MR. OPPENHEIMER: Objection  
7 to form.

8 A. Yeah.

9 Q. Are you familiar with the --

10 A. Perhaps you could clarify what you mean  
11 by "kind of cryptocurrency."

12 Q. Sure. Are you familiar with the term  
13 "stablecoins"?

14 A. Yes, I am.

15 Q. What is a stablecoin?

16 A. A stablecoin is -- it's a cryptocurrency  
17 whose value in terms of a base currency is fixed  
18 and it's maintained that way by just changing the  
19 supplier's needs.

20 Q. Generally, how does that -- how do the  
21 features of a stablecoin differ from XRP?

22 MR. OPPENHEIMER: Objection  
23 to form.

24 A. With respect to that particular feature?

25 Q. Yes.

1           A.    With respect to the particular feature,  
2   so with a stablecoin, the price is fixed and the  
3   quantity varies. With XRP -- and the quantity  
4   varies according to market conditions as needed to  
5   keep the value fixed.

6           With XRP, the amount of XRP in existence  
7   is stable moment to moment. There's no need to  
8   keep the price fixed. And -- I want to be careful  
9   how I say this.

10          So it's -- it's stable in the moment and  
11   it is -- when it changes, it is not just due to  
12   volatility in the price of XRP.

13          Q.    With respect to the money transfer  
14   business, which you -- which you've been  
15   analyzing, and ODL's potential to act as a  
16   disruptive technology, do you have any opinion  
17   about whether use of a stablecoin would provide  
18   one of Ripple's competitors with any sort of  
19   advantages in competing for customers?

20                   MR. OPPENHEIMER:  Objection  
21                   to form.

22          A.    I have not considered this opinion,  
23   this -- this question and I'd have to think about  
24   it.

25          Q.    So at the time you wrote your report,

1 that's not something that you had considered,  
2 right?

3 A. I -- that's correct.

4 Q. Just trying to clarify. Thank you.

5 (Whereupon, exhibit is received  
6 and marked SEC Osler Deposition Exhibit  
7 12 for identification.)

8 (Whereupon, exhibit is received  
9 and marked SEC Osler Deposition Exhibit  
10 13 for identification.)

11 BY MR. MOYE:

12 Q. I'm going to hand you two exhibits.

13 First is Exhibit 12.

14 THE WITNESS: Here you go.

15 Q. The second is Exhibit 13.

16 A. Thank you.

17 Q. They're short so if it would help you,  
18 you could read both of those before I ask you any  
19 questions.

20 (Pause)

21 A. Yeah.

22 Q. Okay. Let's start with Exhibit 12.

23 Exhibit 12 is from CoinDesk. It's a publication  
24 entitled "Mexican Crypto Exchange [REDACTED]  
25 Incorporates Circle Solutions for Cross-Border

1 Payments Initiative."

2 Do you see that?

3 A. Yes, I do.

4 Q. I'd like you to go on the next page,  
5 halfway down, there's a paragraph that begins "By  
6 incorporating the payments solutions of Circle,  
7 the payment services company that operates the USD  
8 coin (USDC) stablecoin, the initiative will allow  
9 users to make deposits and withdrawals via  
10 domestic wire transfers and execute payments in  
11 the U.S. or Mexico."

12 And at the bottom of the page, it  
13 indicates that using an app, "while in-app  
14 exchanges between US dollar-backed stablecoins and  
15 Mexican pesos will be processed in seconds,  
16 according to" Bitco -- "[REDACTED]"

17 So assume for the purpose of the  
18 following question that the [REDACTED] money services  
19 system is now partnering with Circle to use a  
20 stablecoin cryptocurrency and it has an app that  
21 allows payments between U.S. and Mexico to  
22 function in seconds.

23 Based on those assumptions, do you have  
24 reason to believe -- do you have any reason to  
25 believe that Ripple's competitors might prefer to



1 use a stablecoin as a cryptocurrency to allow  
2 money transfers to happen between U.S. and Mexico?

3 MR. OPPENHEIMER: Objection

4 to the form.

5 A. I'd like to highlight that the products  
6 here are different. So what Circle is providing  
7 here is conversion from a fiat into USDC or from  
8 USDC back. They're not focusing on remittance  
9 channels where the conversion is from one fiat  
10 currency to another.

11 Q. Well, for purposes of my question, I've  
12 asked you to assume that the exchanges between  
13 U.S. dollars and Mexican pesos is a similar money  
14 transfer to what we've been describing with --  
15 with Ripple.

16 Do you understand how money could be  
17 transferred from U.S. dollars through the use of  
18 stablecoin to Mexican pesos using this technology?

19 MR. OPPENHEIMER: Objection

20 to the form.

21 You can answer.

22 A. It's -- you're kind of asking me -- let  
23 me clarify here.

24 We have two very different products.  
25 One allows conversion from a fiat currency to a

1 cryptocurrency or vice versa and that's it. It's  
2 not set up to make transfers from one fiat  
3 currency to another fiat currency via a  
4 cryptocurrency. So that's one product.

5 The other product is intended to convert  
6 one fiat currency to another fiat currency using a  
7 cryptocurrency as a medium of exchange in between.

8 These are two very different products.  
9 And your question says, well, what if the Circle  
10 product were actually the same as the XRP product?  
11 Then what would you think?

12 Well, the Circle product is not the same  
13 as XRP, so it -- I can't answer that question.

14 Q. All right. Thanks for that  
15 clarification.

16 Do you believe that this transfer  
17 mechanism as described in this article, using the  
18 U.S. dollar stablecoin, suggests that Ripple's  
19 competitors would prefer the use of a stablecoin  
20 over XRP?

21 MR. OPPENHEIMER: Objection  
22 to form.

23 A. It doesn't suggest any such thing.

24 Q. Okay. You can put that aside.

25 MR. OPPENHEIMER: Before we

1 move on from that, I just want to  
2 note for the record it appears  
3 there's missing text at the top of  
4 both the second and possibly third  
5 page of this exhibit.

6 MR. MOYE: That is very  
7 possible, and if so, it was  
8 inadvertent. So thank you for  
9 pointing that out.

10 BY MR. MOYE:

11 Q. Let's look at Exhibit 13.

12 Exhibit 13 describes a new partnership  
13 MoneyGram has with Stellar to use a USD coin, a  
14 stablecoin governed by Coinbase.

15 And, again, in the third paragraph on  
16 the second page, it -- this article indicates  
17 "Customers will be able to convert cash into and  
18 out of USDC for instant pickup at MoneyGram  
19 locations."

20 Is there anything about this article  
21 that suggests that -- suggests to you that  
22 MoneyGram prefers the use of a stablecoin  
23 cryptocurrency for its money transfer business  
24 rather than continued use of XRP?

25 MR. OPPENHEIMER: Objection

1 to form.

2 A. So I'd like to note there's a -- and I'd  
3 like to clarify why. The -- the reasons that  
4 MoneyGram claimed XRP didn't work in the previous  
5 exhibit you sent to me had to do with fees. Those  
6 fees will still apply, and so -- or one would  
7 assume those fees would still apply.

8 So the -- the fact that they have moved  
9 to another cryptocurrency undermines their  
10 original claim that that's the reason they wanted  
11 to get out of the XRP, the arrangement with  
12 Ripple.

13 Q. Do you have anything else?

14 A. That's all I have to say. There's no  
15 consistency here.

16 Q. Okay.

17 A. So one cannot infer anything.

18 Q. All right. You can put that aside then.

19 MR. MOYE: Want to take  
20 another short break?

21 THE VIDEOGRAPHER: Okay.  
22 Going off the record at 3:53.

23 (Whereupon, a recess is taken.)

24 THE VIDEOGRAPHER: Back on  
25 the record at 4:12.

1 BY MR. MOYE:

2 Q. Dr. Osler, I'd like you to -- I'd like  
3 to hand you what's been marked as Exhibit 6.

4 A. Thank you.

5 (Whereupon, exhibit is received  
6 and marked SEC Osler Deposition Exhibit 6  
7 for identification.)

8 BY MR. MOYE:

9 Q. For the record, Exhibit 6 is the  
10 rebuttal report of [REDACTED] dated November  
11 12, 2021.

12 Are you familiar with Exhibit 6?

13 A. Yes.

14 Q. How did you become familiar with Exhibit  
15 6?

16 A. It was sent to me by counsel.

17 Q. Okay. And after receipt by counsel,  
18 what did you do in terms of reviewing Exhibit --  
19 or studying Exhibit 6?

20 A. I reviewed it and studied it.

21 Q. Okay. I'm going to word this question  
22 carefully.

23 Were you asked by counsel to form or  
24 prepare any opinions in response to Exhibit 6?

25 MR. OPPENHEIMER: Objection

1 to the form.

2 Hang on a second.

3 I think I have to instruct you  
4 not to answer that.

5 MR. MOYE: So this is a  
6 chance, if she's prepared today to  
7 talk about this report, we might be  
8 able to go into it. But if she's not  
9 been asked as her --

10 MR. OPPENHEIMER: Counsel,  
11 you are free --

12 MR. MOYE: -- part of her  
13 engagement --

14 MR. OPPENHEIMER: -- you are  
15 free to ask her about the report and  
16 whether she has formed any opinions  
17 on it in connection with her  
18 engagement. I think what you -- what  
19 I would not allow her to answer is  
20 whether she was -- what instructions  
21 she received from counsel.

22 BY MR. MOYE:

23 Q. All right. So let's try this. These  
24 may be yes-or-no questions.

25 Have you formed any opinions after

1 reading this report?

2 MR. OPPENHEIMER: You can  
3 answer.

4 A. Let me think about this. I'm thinking  
5 about the definition of an opinion. I have formal  
6 opinions here.

7 Q. Correct.

8 A. I certainly have not formed any formal  
9 opinions. I have thought about the positions  
10 articulated here.

11 Q. Okay. And that's what I'm trying to get  
12 at.

13 Is there something formal that you're  
14 prepared to say today on the record about these  
15 opinions? And there's no rebuttal to rebuttal in  
16 this case, but I'm just wanting not just -- not  
17 just a response, but whether, as part of your  
18 engagement, you were authorized to form, create,  
19 or prepare opinions in response to that.

20 MR. OPPENHEIMER: Objection  
21 to the form.

22 You can answer if you  
23 understand.

24 Counsel, you can just ask her  
25 about the report as well, but go ahead.

1           A.    I'd be happy to give you a lecture on  
2   the mistakes in this.

3           Q.    No, I really am here to ask -- talk to  
4   you about your opinions, which you've already  
5   given, so your initial and your rebuttal.

6                    So I just want to know if you prepared  
7   anything formal in response in this rebuttal.

8           A.    Nothing formal.

9           Q.    Okay.

10                               (Whereupon, exhibit is received  
11                   and marked SEC Osler Deposition Exhibit 7  
12                   for identification.)

13   BY MR. MOYE:

14           Q.    Please take a moment to take a look at  
15   what's been marked as Exhibit 7, which is the  
16   amended expert rebuttal report of Patrick E.  
17   ██████████.

18           A.    Amended?

19           Q.    Yeah.  It's dated four days after the  
20   initial report and I believe there was correction  
21   of -- don't quote me on this, but I believe there  
22   was a correction of a typo.

23           A.    Oh.  Well, I have seen his expert  
24   rebuttal report, Mr. ██████████ rebuttal  
25   report.  I do not believe I've seen the amended



1 expert rebuttal report of Mr. [REDACTED]

2 Q. Okay. So I guess I could only ask you  
3 about what you've seen.

4 So did you -- did you review it and  
5 consider it?

6 A. I reviewed it and considered it, yes.

7 Q. Okay. And did you prepare anything  
8 formal in response to it like what you did for  
9 your initial or your rebuttal report in this case?

10 A. I --

11 MR. OPPENHEIMER: Objection  
12 to the form.

13 You can answer.

14 A. I have not prepared a formal response.

15 Q. Okay. Why don't you put those two aside  
16 for right now.

17 (Whereupon, exhibit is received  
18 and marked SEC Osler Deposition Exhibit 8  
19 for identification.)

20 BY MR. MOYE:

21 Q. Are you familiar with what's been marked  
22 as Exhibit 8?

23 A. Yes, I am.

24 Q. What is Exhibit 8?

25 A. It's my rebuttal expert report with

1 respect to Mr. [REDACTED] original expert report.

2 Q. And what were you asked to do by  
3 counsel -- what was your assignment in connection  
4 with this rebuttal report?

5 MR. OPPENHEIMER: You can  
6 answer as to what your assignment  
7 was.

8 Q. And if it helps to refer to page 2,  
9 paragraph 3, that's great. If not, you can go  
10 ahead --

11 A. Ah, there we go. There we go. That's  
12 the best way to put it. Thank you.

13 So I was asked to evaluate and offer my  
14 opinions on Mr. [REDACTED] expert report on the  
15 topics within my area of expertise.

16 Q. All right. And are those opinions set  
17 forth in writing in your report?

18 A. Yes.

19 Q. I'm just connecting dots here. You were  
20 asked to do something. You prepared a report.

21 A. I was asked to do something.

22 Q. Does this contain your opinions and  
23 rebuttals to Mr. [REDACTED] initial expert report?

24 A. I -- yes.

25 Q. Okay. In other words, nothing left out.

1 This -- this was what you intended to submit?

2 A. Nothing left out at the time.

3 Q. All right. So I'd like to ask you about  
4 certain statements that you made in your rebuttal  
5 report to Mr. [REDACTED] and I'd like to ask you a  
6 number of follow-up questions. So I'm going to  
7 direct you to certain areas, but as in other parts  
8 of the deposition today, if you think that to  
9 answer that question, you need to refer to some  
10 other portion of your rebuttal, you can do that.

11 A. Thank you.

12 Q. But let's -- let's direct your attention  
13 to page -- to paragraph 9, Footnote 6. So  
14 Footnote 6 comes at the end of the sentence which  
15 says "He" -- meaning Mr. [REDACTED] -- "asserts that  
16 XRP has a fixed supply that affects its trading  
17 price, supposedly because of the 100 billion units  
18 of XRP that were created initially, a number that  
19 cannot be increased."

20 Did I read that correctly?

21 A. Are we in the paragraph or the footnote?

22 Q. First the paragraph and then the  
23 footnote comes at the end of that sentence.

24 A. I'm sorry, I was reading the footnote.

25 Okay.

1           So "He asserts" -- okay -- "that XRP has  
2       a fixed supply that affects its trading price,  
3       supposedly because of the 100 billion units of  
4       XRP..."

5           Q.    Okay.  And what did you say in your  
6       footnote?  Do you mind reading that out loud?

7           A.    "To be clear, I do not disagree with  
8       Mr. [REDACTED] statement that the total supply of XRP  
9       is capped at 100 billion units.  I disagree with  
10      Mr. [REDACTED] suggestion that this limitation on the  
11      total number of units of XRP can have any  
12      economically significant influence on the  
13      day-to-day trading prices of XRP or that it  
14      provides any basis to distinguish between XRP and  
15      fiat currency."

16          Q.    Okay.  So I have a number of follow-up  
17      questions.

18                Is it your view, Professor Osler, that  
19      the -- that caps or limits on the number of tokens  
20      available in digital asset markets can have no  
21      effect on token price?

22                       MR. OPPENHEIMER:  Objection  
23                       to form.

24           A.    I -- no.

25           Q.    You think they can have an effect on

1 token price?

2 A. I think I was clear in the footnote,  
3 that it is not economically -- has no -- that it's  
4 unlikely to have any sig -- economically  
5 significant influence on day-to-day trading  
6 prices. So up and down, up and down, up and down.

7 Q. All right. Hypothetically, if a  
8 different asset, bitcoin, tomorrow had 100 million  
9 tokens max, maximum, instead of the current  
10 greater limitation and all other things remained  
11 equal, would you expect the price of bitcoin to  
12 change?

13 MR. OPPENHEIMER: Objection  
14 to the form.

15 A. You know, I wasn't asked to opine about  
16 bitcoin and I have nothing to say about bitcoin.

17 Q. Would you be able to draw any conclusion  
18 about the supply of the digital token if it were  
19 suddenly restricted significantly? Do you think  
20 that would have -- do you think that the  
21 principles of economics suggest that any -- that  
22 there would be any effect on the price?

23 MR. OPPENHEIMER: Objection  
24 to the form.

25 A. So there -- there's a big problem with

1 your comments, which is that supply is not  
2 defined. And I have clarified that there are  
3 various concepts of supply at play here. And I am  
4 taking issue with one concept that Mr. [REDACTED]  
5 applies, but he applies a different concept later  
6 on and -- which is more consistent with the one I  
7 would use that I think is relevant for what  
8 happens on a reasonably semi-high-frequent basis.

9 Q. Okay. In your Footnote 6, you use the  
10 qualifier "day-to-day trading prices of XRP."

11 Do you see that?

12 A. Yes.

13 Q. What do you mean by "day-to-day trading  
14 prices"? How does day-to-day qualify or explain  
15 what you're referring to?

16 A. I'm contrasting it with the, say,  
17 averages over periods of time. I'm talking about  
18 the day-to-day fluctuations in prices. And that  
19 is consistent with my immediately following  
20 analysis of what we find in macroeconomics with  
21 respect to exchange rates, which is that the money  
22 supply of a country has no discernible influence  
23 on day-to-day, month -- week-to-week,  
24 month-to-month movements of exchange rates except  
25 in extreme and rare cases and the -- but, of

1 course, it does matter in the long run.

2 Q. Do you believe that the limitation on  
3 the total number of XRP doesn't have any effect on  
4 the day-to-day price for XRP?

5 A. It does -- the hundred billion  
6 limitation? That particular supply concept does  
7 not influence the changes from day-to-day in the  
8 price of XRP.

9 Q. If -- hypothetically, if demand for XRP  
10 were to go up significantly and the total number  
11 of tokens available for XRP did not increase,  
12 would you expect the day-to-day price of XRP to go  
13 up?

14 MR. OPPENHEIMER: Objection  
15 to the form.

16 A. So I'd just like to highlight. Is there  
17 any difference between -- I mean, so this is a  
18 hypothetical. If the supply were not to change  
19 and demand were to rise, would the price go up?  
20 In general in economic markets, that's what  
21 happens.

22 Q. All right. Now, can you analogize that  
23 to the XRP market? If the -- if the demand were  
24 to increase significantly and the supply were not  
25 to change, in other words, that limitation were

1 not to be expanded, would you expect -- would you  
2 generally expect prices to rise?

3 MR. OPPENHEIMER: Objection  
4 to form.

5 You can answer.

6 A. If the supply were not to change, yes.

7 Q. Okay. And what if the supply were --  
8 were to be reduced using those same hypothetical  
9 facts? Would you expect the price to -- to rise  
10 more?

11 MR. OPPENHEIMER: Objection  
12 to the form.

13 A. If the supply is reduced and the demand  
14 simultaneously goes up? Is that --

15 Q. Yes.

16 A. In general, in markets, if the supply is  
17 reduced and the demand goes up -- let's be clear  
18 on the concept of supply that's supplied here. It  
19 is not this hundred billion figure that matters.  
20 It is the amount that's available to trade. That  
21 is the supply concept that's relevant in this  
22 context. That is the supply context -- concept  
23 that Mr. [REDACTED] uses later on to highlight that the  
24 fact that that supply is increasing could be  
25 expected to reduce the price.



1 Q. Is there any timeline where the cap --  
2 where -- where a cap or limitation on the number  
3 of tokens would matter? Like over a very long  
4 timeline, would it matter?

5 MR. OPPENHEIMER: Objection  
6 to form.

7 A. Again, we have -- I need you to be  
8 specific about the exact supply or quantity  
9 concept you have in mind. Are you talking about  
10 the long-run supply or the short-run supply?

11 Q. I think I'm going to stick to asking  
12 questions. That's more fun. Let me -- let me  
13 proceed.

14 If the supply of XRP varied from  
15 day-to-day, would you expect that to influence the  
16 price -- the day-to-day price of XRP?

17 MR. OPPENHEIMER: Objection  
18 to the form.

19 A. As a general rule, as economists have  
20 known for centuries now, changes in supply  
21 typically influence price.

22 Q. Okay. So with respect to XRP -- and  
23 this is a hypothetical -- if the escrow which is  
24 limiting to some degree the circulating supply of  
25 XRP, if the escrow were to be opened up and the

1 XRP that is currently in escrow was allowed to  
2 circulate, would you expect the circulating supply  
3 of XRP to increase quickly and significantly?

4 MR. OPPENHEIMER: Objection  
5 to the form.

6 A. It seems like you defined it as  
7 increasing.

8 Q. I said it was available.

9 A. That was --

10 Q. I haven't -- I haven't spoken about  
11 demand.

12 A. No, but what you've said is the amount  
13 available to trade has gone up. That is the --  
14 that is a reasonable definition in the literature  
15 of the short-run supply. So you said the -- the  
16 amount available to trade. That means the  
17 short-run supply of XRP.

18 Q. Okay. Let me get on the same page with  
19 you.

20 So if the escrow is opened up and the  
21 circulating supply is increased by the amount in  
22 the escrow but demand does not change, what's your  
23 expectation what would happen to the price of XRP?

24 MR. OPPENHEIMER: Objection  
25 to the form.

1                   You can answer.

2           A.    The -- if the entire escrow were made  
3    available immediately or something like that, I  
4    would expect the price to go down.

5           Q.    All right. Okay. Let's look at  
6    paragraph 10, the next paragraph. This starts at  
7    the bottom of page 5 and goes over to the top of  
8    page 6. The phrase I'm going to ask you about is  
9    contained on page 6. At the top of page 6 within  
10   paragraph 10, you say "For XRP this is far less  
11   than 100 billion units in existence because many  
12   billions of XRP are, A, sequestered in escrow  
13   accounts and cannot be traded or potentially, B,  
14   held by individuals or entities with no interest  
15   in selling their XRP holdings."

16                   Do you see that?

17           A.    I do.

18           Q.    And that's what you wrote in your  
19    rebuttal report?

20           A.    I did.

21           Q.    Okay. What is your basis for suggesting  
22    or concluding that XRP is being held by  
23    individuals with no interest in selling their XRP  
24    holdings?

25                   MR. OPPENHEIMER: Objection

1 to form.

2 You can answer.

3 A. I was referring to some of the original  
4 Ripple insiders.

5 Q. Okay. Such as Mr. Larsen,  
6 Mr. Garlinghouse?

7 A. I didn't have specifics in mind.

8 Q. Okay. Are you aware that Ripple, the  
9 company, and Mr. Larsen and Mr. Gar --  
10 Garlinghouse have in the past had a lot of XRP in  
11 their holdings?

12 MS. PROSTKO: Objection to  
13 form.

14 MR. OPPENHEIMER: Objection  
15 to form.

16 MR. MOYE: She beat you to  
17 it.

18 MR. OPPENHEIMER: You can  
19 answer.

20 A. "A lot" is very vaguely defined. I know  
21 they have had some.

22 Q. Okay. Are you aware that in the past,  
23 Ripple and Larsen and Garlinghouse have sold much  
24 of their XRP holdings?

25 MR. OPPENHEIMER: Objection

1 to form.

2 MS. PROSTKO: Objection to  
3 form.

4 A. I have -- I'm aware that sales have been  
5 made.

6 Q. Can you explain then why you say in  
7 paragraph 10 that "XRP is being held by  
8 individuals or entities with no interest in  
9 selling their XRP holdings"? Who are you  
10 referring to?

11 MR. OPPENHEIMER: Objection;  
12 mischaracterizes the document.

13 You can answer.

14 A. I'm -- I'm just referring to people who  
15 own a lot of it and -- general insiders with  
16 respect to Ripple is how I thought about that.

17 Q. Okay. Why do you believe that these  
18 insiders have no interest in selling their XRP?  
19 What -- what allows you to make that conclusion or  
20 suggestion?

21 MR. OPPENHEIMER: Objection  
22 to form; mischaracterizes the  
23 document and her testimony.

24 You can answer.

25 A. I have not thought about that question.

1 Q. Well, what were you thinking when you  
2 wrote in B that some of the hundred billion XRP in  
3 existence -- that many billions of the XRP is  
4 being "held by individuals or entities with no  
5 interest in selling their XRP holdings"?

6 MR. OPPENHEIMER: Objection.

7 Continues to mischaracterize the  
8 document. I don't know why you keep  
9 ignoring the word "potentially," but  
10 okay.

11 A. I -- indicating that there are  
12 individuals that have holdings and that it is my  
13 understanding they have no intention of selling  
14 them any -- in any great amount any time soon.

15 Q. All right. Well, appreciate that  
16 clarification, but I'm still interested in an  
17 answer, if you're willing to give one, is where  
18 you obtained the -- what's the source for your  
19 understanding that individuals such as Ripple  
20 insiders are not interested in selling the XRP  
21 that they hold?

22 MR. OPPENHEIMER: Objection;

23 mischaracterizes and asked and  
24 answered multiple times.

25 A. So I have clarified that I'm aware that

1     there are Ripple insiders and some people who were  
2     once insiders who are not that have significant  
3     holdings and it is -- it was my impression that  
4     those holdings were fairly stable and so that is  
5     the -- the source of my statement.

6           Q.     Okay. So would it be fair to say that  
7     in articulating this part of your report, you did  
8     not consider whether, if the price for XRP were to  
9     increase significantly, those individuals might  
10    have a desire to sell in the future?

11                   MR. OPPENHEIMER: Objection  
12                   to the form.

13           A.     That's a big hypothetical.

14           Q.     It is, but you're an expert. You can  
15    consider and answer that.

16           A.     You know, that's beyond what I have an  
17    opinion about in this document and beyond what I  
18    have an opinion about now.

19           Q.     Okay. Let's look at paragraph 11. Now,  
20    I'm not an economist, so I may -- I may not  
21    understand this the way you wrote it.

22                   But am I correct that in paragraph 11,  
23    you're talking about various models or -- or  
24    properties of fiat currencies and then you're  
25    making an application to how those might affect

1 XRP? Did I understand that correctly?

2 MR. OPPENHEIMER: Objection  
3 to form.

4 A. I -- I -- I'm not sure that's a -- a  
5 great articulation of what's in the paragraph.

6 Q. Well, let's look at the first paragraph.  
7 You say there is a -- "a myriad."

8 Did you mean many?

9 A. Many.

10 Q. Many "empirical studies find that a  
11 country's money supply has little to no detectable  
12 impact on its exchange rates day-to-day,  
13 week-to-week, or month-to-month."

14 A. Yes, I say that.

15 Q. And you're referring to fiat currencies,  
16 correct?

17 A. I'm referring to fiat currencies. And  
18 as I said in Footnote 6, by "day-to-day," I mean  
19 it changes from day-to-day.

20 Q. Okay. And then you talk about the  
21 hypothesis behind some of these myriad studies.  
22 You say, "To quote one of these myriad  
23 statements," and you have a quote in there about  
24 empirical studies, and then you talk about the  
25 time horizons.



1           And then you draw a conclusion: "This  
2 evidence suggests that the supply of XRP - however  
3 it is measured - it also likely to have equally  
4 limited influence on XRP exchange rates."

5           Did I read that last sentence correctly?

6           A. You read that last sentence correctly.

7           Q. Okay. So am I correct that you are  
8 saying that you're saying these empirical studies  
9 have been done and they talk about the supply of  
10 the currency, and because of what I see in these  
11 other studies, I don't think that the supply of  
12 XRP, however it is measured, is going to impact  
13 very much the XRP exchange rate?

14           MR. OPPENHEIMER: Objection

15           to the form.

16           You can answer.

17           A. I think the sentence speaks for itself.  
18 The evidence suggests that the supply of XRP is  
19 likely to have an equally limited influence on XRP  
20 exchange rates.

21           Q. Is there any academic literature  
22 applying the same economic models that are  
23 applicable to fiat currency to cryptocurrency,  
24 particularly with respect to supply of those  
25 currencies?

1 A. I couldn't --

2 MR. OPPENHEIMER: Objection.

3 A. So are -- I guess the question is do you  
4 mean models or empirical analyses?

5 Q. Anal -- we can say analyses, sure.

6 MR. OPPENHEIMER: Same  
7 objection.

8 You can answer.

9 A. Okay. I'm not aware of any.

10 Q. Are you making an assumption for  
11 purposes of paragraph 11 that the same models and  
12 rules that you see in the supply of fiat currency,  
13 that those would apply the same way with regard to  
14 cryptocurrencies?

15 MR. OPPENHEIMER: Objection  
16 to form.

17 You can answer.

18 A. I'm highlighting a parallel that the  
19 evidence -- there's a consensus of evidence with  
20 respect to fiat currencies; that the supply of  
21 those currencies has no detectable influence on  
22 changes in the prices of those currencies over  
23 short horizons, meaning any -- short horizons such  
24 as those I've included here.

25 And so I'm looking at the supply of XRP

1 and I'm saying if the evidence about one form of  
2 money is correct, then we can perhaps use that as  
3 an insight into these -- how it works with this  
4 cryptocurrency.

5 Q. Are you aware that Ripple has escrowed a  
6 very large amount of the XRP that it owns?

7 A. Yes.

8 MR. OPPENHEIMER: Objection  
9 to the form.

10 THE WITNESS: Sorry.

11 Q. What's your -- what's your understanding  
12 of why Ripple did that?

13 MR. OPPENHEIMER: Objection.  
14 You can answer if you know.

15 A. My understanding was that there was a  
16 fear among users that the -- that there was a  
17 potential for a very large increase that could be  
18 detrimental to the functioning of the market and  
19 they wanted to reassure people that there wouldn't  
20 be.

21 Q. Do you view that fear, as you describe  
22 it, among users as irrational?

23 A. I see a strong parallel to the -- the --  
24 how am I going to -- I'm looking for a phrase. My  
25 apologies for being slow -- a strong parallel to

1 the way money is managed in fiat currency  
2 economies, which is it's very important, as we  
3 know, for governments, and specifically central  
4 banks, to ensure that money supplies do not grow  
5 extremely rapidly.

6 And so there was a need to provide the  
7 same reassurance.

8 Q. And with regard to these users, as  
9 you've described them, do you believe that these  
10 users are people that are only holding XRP for a  
11 minute each day as they do foreign currency  
12 transactions or are you thinking of people that  
13 hold their XRP as a store of value for much longer  
14 periods of time?

15 MR. OPPENHEIMER: Objection  
16 to the form.

17 A. You know, I wasn't thinking specifically  
18 about exactly which kind of Ripple user.

19 Q. Well, I think according to paragraph 11,  
20 you said -- if I understand paragraph 11  
21 correctly, I think you're saying that the amount  
22 of currency in circulation does not affect the  
23 day-to-day price one way or the other.

24 And so I'm asking you if you think  
25 Ripple's actions in escrowing a large amount of

1 the XRP that it owns had any economic basis if the  
2 amount in circulation would not have affected the  
3 day-to-day price of XRP?

4 MR. OPPENHEIMER: Objection  
5 to the form.

6 A. There's an elision here that I don't see  
7 the -- it's not clear -- there's an elision here  
8 and I -- that would need to be clarified before I  
9 could answer and the elision is -- oh, God, now I  
10 have to reconstruct it.

11 You've got the escrowing and day-to-day  
12 price changes. And would the escrowing have  
13 affected the day-to-day price changes? Maybe for  
14 one day when it was announced, but otherwise, no.

15 Q. Okay. So just before I move on, can you  
16 clarify whether you thought the users that -- that  
17 Ripple wanted to reassure in creating the escrow  
18 were the people that were doing foreign currency  
19 exchanges using ODL?

20 A. As I --

21 MR. OPPENHEIMER: Objection.  
22 You can answer.

23 THE WITNESS: Sorry.

24 A. As I explained, I didn't think about  
25 exactly which users were going to care about it.

1 Q. When was the escrow created?

2 A. I couldn't -- I don't remember the  
3 precise date.

4 Q. Was it created before or after ODL was  
5 commercially available?

6 A. I don't know the precise date.

7 Q. Okay. Let's look at paragraph 21 of  
8 your rebuttal. Nope, I'm sorry. Went ahead too  
9 fast. Paragraph 17, bottom of page 9.

10 The first sentence of paragraph 17  
11 indicates that "The absence of contrast between  
12 fiat currencies and XRP in this regard also  
13 invalidates Mr. [REDACTED] implicit assertion that  
14 Ripple chose to fix the supply of XRP day-to-day,  
15 and grow it at a slow pace, to lead investors to  
16 expect its price to rise."

17 Do you see that?

18 A. I see that.

19 Q. What do you mean by the qualifying  
20 phrase, "in this regard"? What are you referring  
21 to?

22 A. Oh, good Lord. I apologize. I have to  
23 read the context. You can see that the whole  
24 paragraph refers to what's before it.

25 Q. Yes. Please read paragraphs 16 and 17

1 together if that helps.

2 MR. OPPENHEIMER: Read as  
3 much of the report as you need to to  
4 get the context.

5 MR. MOYE: Or do that.

6 (Pause)

7 A. So the question you posed had to do with  
8 what I was referring to when I say "in this  
9 regard"?

10 Q. That's right.

11 A. I am highlighting that with respect to  
12 Mr. [REDACTED] supposed contrast between fiat  
13 currencies and XRP in terms of the supply, there  
14 is no contrast; that fiat currencies do not have  
15 variable supply in contrast to -- let's see. What  
16 is it? Fiat currencies do not have variable  
17 supply in contrast to what Mr. [REDACTED] had claimed.

18 Q. Do fiat currencies have fixed supply?

19 MR. OPPENHEIMER: Objection  
20 to the form.

21 A. I think we need to be very careful about  
22 the nature of fixed supply as I am in my rebuttal.

23 I highlight that the supply that matters  
24 for day-to-day pricing is kind of a slow-moving  
25 amount that is similar to the slow growth in a

1 country's money supply in a well-managed country.

2 And so that on a minute-by-minute,  
3 day-to-day -- usually day-to-day basis, there is  
4 no change in the supply of XRP or in a country's  
5 money supply. That it's -- and that is why dollar  
6 exchange rates and everything else fluctuate quite  
7 dramatically as I showed in Figure 2 of this  
8 rebuttal.

9 Q. So are you asserting that US dollar  
10 day-to-day has a fixed supply?

11 MR. OPPENHEIMER: Objection  
12 to the form.

13 A. I've clarified that it has a controlled  
14 supply. And, in fact, I show that in one of the  
15 figures in this rebuttal. And, yes, in Figure 1  
16 of this rebuttal, I show that U.S. money supply  
17 grows slowly and fairly steadily and I highlight  
18 that that is a controlled supply, if you will.

19 So I think the relevant contrast is, is  
20 it controlled at any moment or is it changing at  
21 every moment like a stablecoin in order to keep a  
22 fixed price? And the answer is, it is not  
23 changing at every moment like a stablecoin. In  
24 both cases, fiat currencies and XRP, contrary to  
25 Mr. [REDACTED] claim that they're different, in fact,



1 they are the same. They are growing at slow and  
2 relatively steady rates.

3 Q. So I understand your point about fiat  
4 currency being different in its supply than a  
5 stablecoin. I do want to drill down more, though,  
6 and understand what you -- what you mean by a very  
7 slow rate of growth.

8 With regard to December 21st, 2021, do  
9 you believe that the supply of US dollars is fixed  
10 or variable?

11 MR. OPPENHEIMER: Objection  
12 to the form.

13 A. I -- I think that that's -- I just  
14 clarified that fixed is not the relevant concept.

15 Q. Do you believe that it is changing  
16 during the day, during December 21st, 2021?

17 MR. OPPENHEIMER: Objection  
18 to the form.

19 A. I be -- so let's be -- let's talk about  
20 monetary theory and how the money supply process  
21 works. The central bank has indirect control over  
22 the money supply. It controls something called  
23 the monetary base. As I describe in this  
24 rebuttal, the money supply is the monetary base  
25 times something known as the money multiplier.

1 And in -- in -- in most countries most of the  
2 time, the -- the product of the two gives you the  
3 money supply.

4 And so the central bank is doing its  
5 best to create slow, steady growth in the money  
6 supply, changing the monetary base as needed. And  
7 the signals in there are a little loose, so on any  
8 given day, there may be some slight changes going  
9 on. But the -- what the central bank is  
10 achieving, as highlighted in Figure 1 very  
11 clearly, is slow, steady growth in the money  
12 supply. That is what's being achieved.

13 Q. I understand that's what you're  
14 referring to in Figure 1. What I'm asking you may  
15 be a different question, but I think we're getting  
16 to the heart of it.

17 Do you think that the money supply  
18 available in US dollars on December 21st, 2021, is  
19 changing, however slightly, during today, during  
20 the day?

21 MR. OPPENHEIMER: Objection;  
22 asked and answered.

23 Q. You can answer.

24 MR. OPPENHEIMER: You can  
25 answer again.

1           A.    You know, it -- I guess what I'm trying  
2   to say is Mr. [REDACTED] characterization is false  
3   whether or not it changes a tiny bit on a day.

4           Q.    Perfect. Thank you.

5                   And with regard to the analogy between  
6   the central banks and the indirect supplier using  
7   and how we're -- and trying to get to the function  
8   or operation of XRP, how it's performing, do you  
9   view Ripple as acting analogous to central bank  
10   with regard to XRP the way the Federal Reserve  
11   acts with regard to the US dollar?

12                   MR. OPPENHEIMER: Objection  
13                   to the form.

14           A.    They are very different.

15           Q.    Very different.

16                   Did you not suggest earlier that the  
17   goal of the Federal Reserve would be to grow  
18   slowly the supply of US dollars over time? Is  
19   that -- did I understand your testimony correctly?

20           A.    That is correct. I said that.

21           Q.    Okay. Do you believe Ripple has the  
22   same goal or objective with regard to the supply  
23   of XRP, to have it grow slowly over time?

24                   MR. OPPENHEIMER: Objection  
25                   to the form.

1           A.    I wouldn't know.

2           Q.    Why do you think Ripple has escrowed  
3   such a significant percent -- such a significant  
4   percentage of the XRP that would otherwise be  
5   available to trade if it was not interested in  
6   controlling in some way the amount of XRP  
7   available?

8                       MR. OPPENHEIMER:  Objection;  
9                       mischaracterizes the record, assumes  
10                      facts not in evidence, ambiguous, and  
11                      I think asked and answered.

12                     You can answer again.

13          Q.    Yeah, go ahead.

14          A.    Ripple was sending a signal to the  
15   market that one extreme possibility would not  
16   happen.  There was -- the -- the market recognized  
17   an extremely unlikely but nonetheless, in their  
18   view, possible outcome of a huge flood in the  
19   amount of XRP available all at once.

20                And Ripple was escrowing it to send a  
21   signal to people that there would not be a huge  
22   flood all at once.

23          Q.    Are Ripple and its founders continuing  
24   to sell XRP into the market today?

25          A.    Today like today this day?

1 MS. PROSTKO: Objection.

2 Q. Not like today the 21st of December, but  
3 this year.

4 MR. OPPENHEIMER: Objection  
5 to form.

6 A. My understanding is that they -- the way  
7 they choose to sell has to do with what's needed  
8 to support the transactions on ODL in particular,  
9 I believe. In fact -- yeah. I believe --

10 Q. Is it analogous to growing -- sorry to  
11 interrupt. No, that's fine.

12 MR. OPPENHEIMER: Were you  
13 done with your answer?

14 THE WITNESS: I'm done  
15 answering.

16 Q. Okay. Is it in any way analogous to  
17 growing the supply of XRP slowly over time as  
18 needed?

19 MR. OPPENHEIMER: Objection  
20 to the form.

21 You can answer.

22 A. There's a -- there's a difference here  
23 that's quite important. The -- the goal of a  
24 central bank in controlling the money supply is to  
25 avoid inflation, avoid too many change -- too fast

1 changes in the value of a money in terms of goods  
2 and services.

3 The goal of Ripple is to ensure there is  
4 sufficient liquidity, sufficient amount for  
5 trading so that people don't run short. And a  
6 shortage of money is something that has happened  
7 historically and can be a problem.

8 Q. So how much -- do you have any idea how  
9 much XRP is needed on a day-to-day or short-term  
10 basis to trade in connection with ODL?

11 A. I could not put a precise number on it  
12 at all.

13 Q. Are you suggesting in your answers today  
14 that Ripple and its founders are only selling XRP  
15 into the market to increase the supply and allow  
16 ODL transactions to occur instead of a variety of  
17 other reasons?

18 MR. OPPENHEIMER: Objection  
19 to the form.

20 MS. PROSTKO: Objection to  
21 the form.

22 A. I could not preclude other reasons.

23 Q. Okay. Let's look at paragraph 18. I'm  
24 paraphrasing you, but you indicate that  
25 Mr. [REDACTED] incorrect. You think there's not a

1 meaningful distinction between fiat currencies and  
2 XRP with respect to whether the supplies and  
3 prices are fixed or variable and that this  
4 incorrect assertion also extends to his discussion  
5 of stablecoins.

6 Am I more or less correct about what  
7 you're saying?

8 A. We haven't gotten to the meat of what  
9 I'm saying in that paragraph.

10 Q. All right. Let me ask you some related  
11 questions to what you're saying in that paragraph.

12 On a -- on any given day of the week --  
13 could be this week, could be last week, could be  
14 next week -- do you believe XRP has a variable or  
15 a fixed supply?

16 MR. OPPENHEIMER: Objection  
17 to the form.

18 A. I have been very clear that fixed is not  
19 the concept I'm working with; that it would not be  
20 a relevant -- in -- in the context of the supply  
21 of XRP, controlled would be -- or, anyhow. It's  
22 fixed on a -- on most individual days, it is  
23 fixed. I would be happy to say that.

24 Q. Okay. Does XRP have a fixed price  
25 relative to the price of the US dollar?

1 A. No, it does not.

2 Q. On any given day of the week, does the  
3 USDC stablecoin have a variable supply?

4 A. It does so far as I'm aware. My  
5 understanding of how those work is that the supply  
6 changes to keep the price in respect to US dollar  
7 fixed.

8 Q. Okay.

9 A. The point of the paragraph is that that  
10 does not fix the price of the USDC in terms of any  
11 other currency.

12 Q. Any other currency. Okay.

13 But you agree USDC does have a fixed  
14 price relative to -- that USDC does have a fixed  
15 price relative to US dollar?

16 A. Relative to one currency, yes.

17 Q. Okay. Let's go to paragraph 19.

18 You say "Contrary to the assertion in  
19 paragraph 27 of Mr. [REDACTED] report, economic  
20 analysis indicates that a stablecoin would be  
21 neither better nor worse than XRP as a vehicle  
22 (bridge) currency because the value of a  
23 stablecoin is only stable with respect to one  
24 currency. The issues Mr. [REDACTED] identifies with  
25 XRP in paragraphs 28 and 29 of his report would



1 therefore arise equally with a stablecoin."

2 Did I read that correctly?

3 A. You did read that correctly.

4 Q. All right. What is the assertion that  
5 Mr. [REDACTED] made in paragraph 27 of his report?

6 MR. OPPENHEIMER: Objection  
7 to form.

8 Q. I can give you a copy of the report  
9 if -- if it would be helpful.

10 A. And this is his -- not --

11 Q. This is his original report.

12 A. -- not his amended rebuttal, but --

13 Q. Okay. I'm going to hand you -- the  
14 question is still pending, but I'm going to hand  
15 you what's been marked as Exhibit 9 because I  
16 believe that may assist your answer.

17 A. All right.

18 MR. OPPENHEIMER: I'll  
19 withdraw the objection now that she's  
20 got a copy.

21 (Whereupon, exhibit is received  
22 and marked SEC Osler Deposition Exhibit 9  
23 for identification.)

24 THE WITNESS: Okay.

25 MR. MOYE: Perfect.

1 A. 27.

2 Q. So what's the assertion you're  
3 disagreeing with?

4 A. Okay. So the overall assertion is that  
5 stablecoin -- you know, it's hard to know where to  
6 start. I'm so sorry. The overall -- the  
7 overall -- contrary to the assertion in paragraph  
8 27, he's arguing in general that a stablecoin  
9 would be superior as a -- as a vehicle currency  
10 and -- which is colloquially known as a bridge  
11 currency and -- and I'm taking issue with that.

12 Q. You disagree with that for the reasons  
13 set forth in paragraph 19 of your report?

14 MR. OPPENHEIMER: Objection  
15 to the form.

16 You can answer.

17 A. Okay. I disagree with that for reasons  
18 set out in paragraph 18, and paragraph 19 can be  
19 interpreted as a summary, if you will, of the  
20 implications of paragraph 18.

21 And what I highlight in paragraph 18 is  
22 that the value of a stablecoin is only stable with  
23 respect to one currency. So, for example, if --  
24 suppose we wanted to use a stablecoin to get from  
25 Japanese yen to pesos as we've been talking about.

1 The initial exchange rate is between the yen and  
2 the stablecoin, which is tied to the dollar, and  
3 the subsequent exchange rate is between the  
4 stablecoin and the peso and the stablecoin again  
5 is tied to the dollar.

6 Well, we know that dollar exchange rates  
7 are quite volatile, so the value of the stablecoin  
8 in the two exchange rates for that transaction  
9 would be unstable. Would be -- well, let me just  
10 say would not be stable.

11 And the idea put forth by Mr. [REDACTED]  
12 that the median price would be fixed, is  
13 incorrect.

14 Q. Okay. In paragraph 19, you -- you're  
15 disagreeing with Mr. [REDACTED] for the reasons  
16 explained. You say "economic analysis indicates."

17 What economic analysis are you referring to? Are  
18 you referring to your own understanding and  
19 analysis or something else?

20 MR. OPPENHEIMER: Objection

21 to form.

22 A. I'm referring to the economic analysis  
23 in my report --

24 Q. Okay.

25 A. -- where I -- yeah. I take the broad

1 understandings in the literature, I apply them to  
2 the facts, and that's my analysis.

3 Q. All right. Let's look at paragraph 21.

4 MR. OPPENHEIMER: Of which  
5 report?

6 MR. MOYE: Of the Osler  
7 rebuttal.

8 MR. OPPENHEIMER: Thank you.

9 Q. So there's a sentence in here. You say  
10 "First, and most significantly, a person" -- you  
11 quote Mr. [REDACTED] You say he's mistaken. You say  
12 his assertion "is flatly incorrect." And then you  
13 say "The vast majority of fiat currency  
14 transactions that do not start or end in US  
15 dollars require two steps, not one."

16 Do you see that?

17 A. Yes.

18 Q. Okay. So I have a related question.

19 A. I think it's important for the record to  
20 just highlight what Mr. [REDACTED] did say.

21 Q. Please read it.

22 A. "Mr. [REDACTED] mistakenly asserts that 'when  
23 using a traditional cross-border payment systems  
24 there is a single foreign exchange transaction.'"

25 Q. Correct. So I'm asking you about ODL.

1           What percentage of ODL volume do you  
2           understand is involved in a payment corridor that  
3           does not start or end in US dollars?

4                       MR. OPPENHEIMER:  Objection  
5           to the form.

6                       You can answer.

7           A.    I would have -- I -- I do not have  
8           precise numbers.

9           Q.    Do you know if that amount is  
10           significant at all?

11                      MR. OPPENHEIMER:  Objection  
12           to form.

13           A.    I do not know, I'm sorry.  What I do  
14           know is -- well, I'll just leave it at that.

15           Q.    So do you know -- do you know whether,  
16           in fact, the percentage of ODL volume involved in  
17           a payment corridor that does not start or end in  
18           USDA and USD is extremely small, less than a  
19           percentage?

20                      MR. OPPENHEIMER:  Objection  
21           to form.

22           A.    Here's what I do know.  Ripple has  
23           focused on creating networks in the Pacific Rim  
24           and has created quite a few relationships with  
25           Pacific Rim remittance service providers as we

1 discussed this morning. And that is a logical  
2 strategic development according to standard  
3 economic analysis for disruptive innovation and  
4 dealing with products that require a network.

5 So that all fits.

6 Q. Let me ask you hypothetically. Assuming  
7 the Pacific Rim were in this corridor that  
8 you're -- that you've been discussing. Suppose it  
9 runs, hypothetically, to or from the United  
10 States.

11 Wouldn't that eliminate for the purpose  
12 of that corridor virtually all transactions  
13 within that remittance corridor because it would  
14 either start or end in US dollars?

15 MR. OPPENHEIMER: Objection  
16 to form.

17 A. I -- I -- perhaps I'm unable to make  
18 sense of your question.

19 Remittances go all throughout that  
20 region, from one country to another, from  
21 Singapore to Malaysia, from Thai -- Japan to  
22 Thailand, from Hong Kong to all of these  
23 countries. From South Korea, that's another one  
24 of the rich ones, to the Philippines.

25 So the dollar would -- if the U.S. is

1 added as another node, that would not change the  
2 amount of -- that would not change anything.

3 Q. So let's be clear about this. We're  
4 talking about ODL.

5 Do you know, in fact, the country of  
6 origin and the destination country for all of the  
7 transactions that take place in that remittance  
8 corridor?

9 MR. OPPENHEIMER: Objection  
10 to form.

11 You can answer.

12 A. I -- I do not know that -- that  
13 information.

14 Q. Do you believe that the ODL -- that the  
15 transactions using ODL in the Pacific remittance  
16 corridor do not mostly involve US dollars in the  
17 originating or ending currency?

18 MR. OPPENHEIMER: Objection  
19 to form.

20 You can answer.

21 A. I don't -- within -- maybe I -- I just  
22 lost track of the question. It's getting late in  
23 the day. Say it again.

24 Q. Yeah.

25 Did you look to determine for the use of

1 ODL the amount of transactions which did not begin  
2 or end with US dollars?

3 MR. OPPENHEIMER: Objection.

4 You can answer.

5 A. I did not look. I would be surprised if  
6 such information were available.

7 Q. But without looking, you can't -- you  
8 can't be certain, can you?

9 A. I cannot be certain, but I do know  
10 where the -- yeah.

11 Q. Let's look at paragraph 21. Continue to  
12 look at paragraph 21, a little further down. You  
13 talk about currency pairs including the Danish  
14 krone and the euro and the Japanese yen and the  
15 euro. I have some questions about that.

16 What's the basis for your understanding  
17 about how these currency pairs operate? I didn't  
18 see a footnote but I could have missed it.

19 A. This is common knowledge with respect to  
20 how the foreign exchange market works.

21 Q. Okay. Is there a currency pair for the  
22 Australian dollar to the Philippine peso?

23 A. I don't believe so.

24 Q. Is there a currency pair for the Swiss  
25 franc to currency other than the U.S. dollar?



1           A.    So let's be clear. Perhaps we need to  
2   be precise about when you say "a currency pair."  
3   The pair exists. Is there active trading in the  
4   direct exchange? I do not believe so.

5           Q.    All right. Is it possible there's a  
6   host of other trading pairs where there's no  
7   active trading going on?

8                       MR. OPPENHEIMER: Objection  
9                       to form.

10                      You can answer.

11          A.    So technically one could be precise  
12   about the number of theoretical pairs. I worked  
13   out the number using the United Nations' number of  
14   active currencies, which is 154. And you can do  
15   the math. And it turns out that the theoretical  
16   number of pairs is something above 11,000.

17                And in terms of the actively traded  
18   pairs, it -- the understanding around those of us  
19   who know foreign exchange, supported by -- well,  
20   anyhow, the understanding, the knowledge, is that,  
21   by and large, the vast majority of these only  
22   trade directly with dollar and the major  
23   exceptions are now euro within Europe.

24          Q.    Do you know what percentage of ODL's  
25   volume is with Pacific Rim?

1 MR. OPPENHEIMER: Objection;  
2 asked and answered.

3 A. I'd like to highlight that in my  
4 analysis, I'm looking forward to -- I'm  
5 considering whether the product can become an  
6 important competitor. And so I look at the total  
7 amount. The total, all the corridors of  
8 remittances.

9 And as I highlight in paragraph 22,  
10 there are massive amounts of remittances from  
11 states in the Near East to the subcontinent of  
12 Asia. There are tons of remittances going around  
13 Asia. There's tons of remittances going from  
14 Europe now to the Near East. So those are the  
15 channels that I consider important, the ones where  
16 Ripple could in the future compete.

17 Q. So I apologize if this is too similar to  
18 some of the prior questions I've asked you. I'm  
19 used to repeating myself a little bit.

20 Can you tell me why you didn't think it  
21 was important to look at Ripple's experience using  
22 ODL in forming your opinion about whether ODL is  
23 well suited to compete as a disruptive technology?  
24 I mean, wouldn't it make sense to look at Ripple's  
25 past experience in determining whether it has

1 built a better mousetrap than the rest of the  
2 world?

3 MR. OPPENHEIMER: Objection.

4 You can answer.

5 A. There's an assumption here that I did  
6 not look. The premise is false.

7 Q. Did you look at MoneyGram?

8 MR. OPPENHEIMER: Objection.

9 You can answer.

10 A. I did not look closely at MoneyGram.

11 Q. Did you look at the volume that goes  
12 back and forth through using ODL to the Pacific  
13 Rim?

14 A. As I have stated already, that  
15 information is not available.

16 Q. How do you know it's not available? Did  
17 you ask Ripple?

18 MR. OPPENHEIMER: Objection.

19 A. As I have stated, I did not reach out to  
20 Ripple and I have not communicated with Ripple.

21 Q. Okay. And do you know whether the flow  
22 of money between the United States and Mexico  
23 flows predominantly in one direction or the other  
24 as -- as used by Ripple's ODL product?

25 MR. OPPENHEIMER: Objection.

1           A.    As I have said, I don't have the  
2   information on what's exactly on ODL.

3           Q.    Okay. So let's look at paragraph 25.  
4   The top of page 13, in the middle of paragraph 25,  
5   you're referring to "interbank transfers." You  
6   say "the kind Mr. [REDACTED] considers here are the  
7   most expensive with average costs in excess of 10  
8   percent for remittances."

9                   Do you see that?

10          A.    I see that text.

11          Q.    Okay. So with respect to those  
12   remittances which have the fees in excess of 10  
13   percent that you've discussed previously today,  
14   who is bearing those costs? Is it the end user?

15                   MR. OPPENHEIMER: Objection  
16                   to form.

17          A.    The 10 percent number I cited earlier,  
18   as I explained earlier, is the sum of costs borne  
19   by senders and receivers.

20                   THE REPORTER: Borne by?

21                   THE WITNESS: Senders and  
22                   receivers.

23          Q.    So at least one of those would be the  
24   end user, correct? The person who ends up with  
25   the funds?

1 MR. OPPENHEIMER: Objection

2 to form.

3 You can answer.

4 Q. Let's use your terminology. I  
5 apologize.

6 A. Okay.

7 Q. All right. Do you understand  
8 Mr. [REDACTED] report to be evaluating costs to  
9 senders and receivers or is he evaluating costs to  
10 remittance services?

11 MR. OPPENHEIMER: Objection.

12 You can answer.

13 A. Let's be clear. Mr. [REDACTED] statement  
14 is ambiguous in many ways. And as I highlight  
15 here, he -- he con -- he appears to confuse  
16 bid/ask spreads and fees.

17 So without clarity, it's -- it would be  
18 very difficult to know exactly who he had in mind.

19 Q. Are you certain you understood what he  
20 was saying in his report? Is it possible you  
21 misperceived or misunderstood?

22 MR. OPPENHEIMER: Objection

23 to the form.

24 You can answer.

25 A. I am certain that he was confused

1 because he supports his description of fees with  
2 information about bid/ask spreads rather than fees  
3 from an academic paper.

4 THE REPORTER: From?

5 THE WITNESS: From an  
6 academic paper. You know what? I'm  
7 getting really dry.

8 Q. Let's look at paragraph 27. You say  
9 "Mr. [REDACTED] argues that 'anyone buying XRP to  
10 facilitate cross-border payments would have to  
11 bear the substantial price volatility of XRP.'  
12 This argument misunderstands the nature of  
13 volatility and how the ODL product actually  
14 functions."

15 Do you see that?

16 A. Yes.

17 Q. So in your report -- or in making that  
18 statement, are you talking about the -- are you  
19 talking about money transmitters or are you  
20 talking about market participants, including  
21 market makers?

22 A. With respect to what?

23 Q. Your criticism in paragraph 27.

24 A. I'm discussing Mr. [REDACTED] point that  
25 anyone buying XRP to facilitate. So however he's

1 defining "anyone," I'm disputing -- I'm -- I'm  
2 disputing that point.

3 Q. Okay. Are -- are you intending to  
4 suggest that market makers would not be subject to  
5 substantial price volatility in XRP?

6 MR. OPPENHEIMER: Objection  
7 to form.

8 A. What I highlight is that the standard  
9 deviation of -- or the volatility of exchange rate  
10 of the XRP price in terms of dollars at the  
11 five-second time horizon is less than 1/100th of 1  
12 percent. And I contrast that with a figure he  
13 provides of 65.1 percent, which is this annualized  
14 version of one-month volatility and is not  
15 relevant to the actual volatility that would be --  
16 that anyone would be subject to at the five-second  
17 time horizon.

18 And this -- this amount of volatility is  
19 quite small. And I also highlight -- I believe I  
20 highlight it in there somewhere -- that dollar --  
21 I highlight in these documents the dollar is quite  
22 volatile. It's an -- dollar exchange rates are  
23 volatility and, as a result, anyone who uses the  
24 normal foreign exchange markets to get from one --  
25 from one nondollar currency to another and -- and

1 uses the dollar as a vehicle currency would also  
2 be subject to volatility in that small time  
3 horizon.

4 Q. As you understand the ODL corridor, does  
5 anyone hold XRP for longer periods of time than  
6 you suggest in your report?

7 MR. OPPENHEIMER: Objection  
8 to form.

9 A. It's my understanding that the -- so the  
10 sender of the fiat currency does not and the  
11 remittance service provider does not. Ripple, as  
12 a market maker, might or might not. And then on  
13 the other end, you've got the remittance service  
14 provider on the other end, which can be the same  
15 as the first one, they do not. And the final  
16 recipient of the fiat currency does not.

17 Q. Are you assuming that Ripple does not  
18 use market makers to provide liquidity in the ODL  
19 corridor?

20 THE REPORTER: I'm sorry,  
21 repeat.

22 Q. Are you assuming that Ripple does not  
23 use market makers to provide liquidity in ODL  
24 corridors?

25 MR. OPPENHEIMER: Objection



1 to form.

2 A. I have -- so what I have -- okay. No,  
3 I'm not assuming.

4 Q. You think you have some knowledge  
5 that -- that precludes the possibility of Ripple  
6 using market makers in its ODL corridors?

7 MR. OPPENHEIMER: Objection  
8 to form.

9 A. Okay. We're getting tangled. Let's  
10 start again on that one.

11 Q. All right. Does Ripple use market  
12 makers to provide liquidity in its ODL corridors?

13 MR. OPPENHEIMER: Objection.

14 A. Clarify what you mean for "use market  
15 makers," please.

16 Q. Yeah. Do people who use ODL, the ODL  
17 product, for foreign currency exchange, do they  
18 obtain their XRP from market makers other than  
19 Ripple to effectuate these transactions?

20 MR. OPPENHEIMER: Objection  
21 to form.

22 A. My understanding of the ODL product is  
23 that Ripple provides the XR -- does the  
24 transaction in the middle as a market maker, as I  
25 said earlier, and that Ripple sometimes sources --

1 and I -- the -- the XRP from other market  
2 participants whether they're market makers or not.

3 Q. Okay. So I think you've explained your  
4 understanding and I appreciate that and I thank  
5 you for that.

6 I'm going to suggest a hypothetical.  
7 Suppose you're wrong and suppose that in ODL  
8 transactions, remittance providers reach out to  
9 market makers other than Ripple to buy and sell  
10 XRP in order to effectuate these transactions.

11 Under those conditions, wouldn't those  
12 market makers be exposed to price volatility in  
13 XRP because they are going to hold their XRP  
14 longer than a minute or five seconds or -- or this  
15 shorter time period we've talked about?

16 A. The nature of market making is to take  
17 on inventory risk. This is one of the things that  
18 all market makers in all circumstances do and they  
19 get compensated for it.

20 Q. Let's look at paragraph 28.

21 MR. MOYE: Why don't we do  
22 that now. Want to take a short --  
23 why don't we take a short break so he  
24 can switch cards.

25 THE WITNESS: Okay.

1 THE VIDEOGRAPHER: Okay.

2 Going off the record at 5:19.

3 (Whereupon, a recess is taken.)

4 THE VIDEOGRAPHER: Okay.

5 Back on the record at 5:35.

6 BY MR. MOYE:

7 Q. Professor Osler, do you know whether  
8 Ripple in the past has paid market makers because  
9 they bear the risk of holding XRP?

10 A. I do not know that.

11 Q. Let's look at paragraph 31 of your  
12 rebuttal. If I'm understanding correctly, you  
13 indicate that "exchange rates among fiat  
14 currencies are highly volatile."

15 Do you see that?

16 A. I do.

17 Q. And you criticize Mr. [REDACTED] for what you  
18 think is a misunderstanding about the average  
19 change in certain prices between vehicle  
20 currencies, is that correct?

21 MR. OPPENHEIMER: Objection  
22 to form.

23 A. I -- I'm not sure that's how I would  
24 articulate it at all.

25 Q. Okay. How would -- how would you

1 articulate what you're saying in paragraph 31?

2 A. I'll finish reading the paragraph and  
3 then I'll provide a summary. All right.

4 (Pause)

5 A. So Mr. -- all right. If I...

6 Q. [REDACTED]

7 A. Yes, I'm -- I'm trying to -- Mr. [REDACTED]  
8 yes. I'm trying to just reconstruct the line of  
9 reasoning here.

10 So I'm saying that a fiat currency would  
11 have volatility if it were used as a vehicle  
12 currency as is true for XRP. And, in fact, the  
13 dollar is used as the vehicle currency in the  
14 world's foreign exchange market. It is -- it is  
15 the dominant vehicle currency as I've discussed.  
16 And dollar exchange rates are volatile, which  
17 means that in the whatever seconds it is involved  
18 in a conversion from yen to Phil -- to dollars and  
19 dollars to Philippine pesos, whoever is doing the  
20 conversion is exposed to risk.

21 Q. Okay.

22 A. So there's to be -- to summarize that,  
23 there's no qualitative difference in that between  
24 XRP and a fiat currency.

25 Q. Is it your understanding that one of the

1 main remittance corridors that was involved in  
2 using the ODL was between United States and  
3 Mexico? Is that consistent with your  
4 understanding?

5 MR. OPPENHEIMER: Objection  
6 to form.

7 You can answer.

8 A. I think I clarified earlier that I was  
9 not aware of the balance of doll -- of remittance  
10 flows within ODL.

11 Q. Were you aware that the corridor between  
12 United States and Mexico was one of the corridors  
13 where ODL was used?

14 MR. OPPENHEIMER: Objection.  
15 You can answer.

16 A. I think I've answered that.

17 Q. Is that a yes?

18 A. It depends on how the question was  
19 phrased.

20 Q. Let's repeat --

21 A. I have answered that I did -- was not  
22 aware of the balance of where ODL -- of currency  
23 pairs of remittance corridors where ODL was used.

24 Q. Okay. Well, please assume for this  
25 question then that it is true that the remittance

1 corridor is between the United States and  
2 Mexico -- sorry -- and ODL was used to make  
3 currency transactions in that corridor. Okay?

4 A. Okay.

5 Q. Is there a vehicle corridor -- is there  
6 a vehicle currency when trading between US dollars  
7 and Mexican pesos?

8 A. No, there is not.

9 Q. How does the US dollar function in  
10 trading between US dollars and Mexican pesos?

11 A. It functions as the beginning currency,  
12 the sending currency, and -- yeah, it's the  
13 sending currency and then Mexican pesos are the  
14 receiving currency.

15 Q. Okay. For transactions from US dollar  
16 to Mexican pesos, do you know how long US dollars  
17 is being held?

18 MR. OPPENHEIMER: Objection.

19 You can answer.

20 A. If -- there's an apples-to-oranges  
21 comparison here. The -- there's no vehicle  
22 currency, so there no concept of holding the  
23 dollars.

24 Q. So how about for a transaction that does  
25 use a vehicle currency? Some Australian dollars

1 to US dollars to Philippine pesos.

2 Do you have any understanding of how  
3 long the sender is exposed to price volatility of  
4 US dollars?

5 A. In the wholesale foreign exchange  
6 market, those transactions happen extremely  
7 rapidly. Seconds.

8 Q. Is the sender exposed to price  
9 volatility if it takes time to settle?

10 MR. OPPENHEIMER: Objection.

11 You can answer.

12 Q. I'm sorry.

13 Is the recipient exposed to price  
14 volatility?

15 MR. OPPENHEIMER: Objection.

16 A. I -- I'm trying to understand your  
17 question. Perhaps you can clarify the mechanism  
18 you have in mind.

19 Q. Sure.

20 How much time does it take, as far as  
21 you know, for a transaction to settle from  
22 Australia to the Philippines?

23 A. Are we talking about settlement time or  
24 trading time? Because these are different  
25 concepts.

1 Q. Let's talk about settlement time.

2 A. Okay.

3 Q. Do you know how long that takes?

4 A. In the foreign exchange market, the  
5 wholesale foreign exchange market, which are used  
6 by banks and Western Union, it takes two days for  
7 the majority of currency pairs to settle.

8 Q. During those two days, does the price at  
9 which the transaction was executed change?

10 A. No, the trade has already happened, so  
11 the price is all set.

12 Q. So does anyone bear the cost of the  
13 longer settlement time in that transaction?

14 MR. OPPENHEIMER: Objection.

15 You can answer.

16 A. The cost is not well defined. Is there  
17 a price change to worry about in the two days?  
18 No, because the trade has been finalized and so  
19 the price is -- no.

20 Q. Okay. Look at paragraph 33. It's a  
21 long paragraph -- feel free to read it -- but I'm  
22 going to ask you about the second-to-last sentence  
23 in what you say Mr. [REDACTED] has failed to consider.

24 A. Okay.

25 (Pause)



1 A. Okay.

2 Q. All right. So in paragraph 33, you say  
3 "Mr. [REDACTED] fails to consider the more logical  
4 explanation, that Ripple's statements advanced the  
5 goal of building Ripple's own network, as opposed  
6 to generating interest among Mr. [REDACTED] so-called  
7 'investment-oriented purchasers' of XRP."

8 Did I read that correctly?

9 A. You read that correctly.

10 Q. Okay. So I want to ask you -- you  
11 understand that in the [REDACTED] report, he quoted  
12 from a variety of statements and documents  
13 originated by Ripple or its executives, correct?

14 THE REPORTER: I -- I can't  
15 hear that. He quoted from a variety  
16 of statements and documents...

17 Q. -- statements and documents that  
18 originated with Ripple or its executives, correct?

19 A. He does.

20 Q. Okay. So I'd like to direct you to the  
21 [REDACTED] -- initial [REDACTED] report, which is Exhibit 9.

22 A. Do we have that one already?

23 Q. You do.

24 A. Okay. And 3, 1.

25 Q. Look on your right.

1 A. Is it one of these perhaps?

2 Q. I think so.

3 A. It says [REDACTED] expert report. Yes.

4 Q. Okay. Please look at page 24 of the

5 [REDACTED] report. At the top -- this is within

6 paragraph 43. Mr. [REDACTED] says "Indeed, when the

7 escrow" -- this is the escrow of XRP -- "was

8 announced, Ripple CEO Brad Garlinghouse wrote

9 about how this would benefit 'investors.'"

10 Please read for the record -- and do it

11 reasonably slowly -- the quote from

12 Mr. Garlinghouse that's in Mr. [REDACTED] report.

13 A. "Today we are permanently removing" the

14 uncertainty -- "that uncertainty by committing to

15 place 55 billion XRP into a cryptographically

16 secured escrow account by the end of 2017. By

17 securing the lion's share of our XRP, investors

18 can now mathematically verify" that the -- "verify

19 the maximum supply of XRP that can enter the

20 market."

21 Q. What do you understand Mr. Garlinghouse

22 to be saying in that quote?

23 MR. OPPENHEIMER: Objection

24 to form.

25 A. I think consistent with what I said

1 earlier, he's removing uncertainty.

2 Q. For whom?

3 MR. OPPENHEIMER: Objection.

4 A. As I said earlier, he's removing it for  
5 lots of people. He specifies investors, but he's  
6 removing it for anyone interested in XRP for any  
7 purpose.

8 Q. Okay. So that's your understanding.  
9 But do you attribute any -- any significance to  
10 his use of the term "investors"?

11 MR. OPPENHEIMER: Objection.

12 A. I -- no.

13 Q. In other words, why are you reading it  
14 more broadly than the term "investors" that he  
15 used here?

16 MR. OPPENHEIMER: Objection  
17 to form.

18 A. He -- okay. He specifies investors?

19 Q. He does.

20 A. I do not attribute significance to it.  
21 I -- my own interpretation is, as I said earlier,  
22 he removed uncertainty for anyone interested in  
23 XRP one way or the other.

24 Q. Okay. So thank you for clarifying that  
25 and I think we've established that.

1           My question is why. Why didn't you  
2       attribute any significance to the word  
3       "investors" in your understanding of this quote?

4                       MR. OPPENHEIMER: Objection.

5           A. I -- I have not been asked to opine on  
6       Mr. Garlinghouse's mind and I have no opinions  
7       about it.

8           Q. But you did opine on whether Mr. [REDACTED]  
9       was correctly interpreting Mr. Garlinghouse's  
10      statement, did you not?

11                   MR. OPPENHEIMER: Objection;  
12      mischaracterizes the report.

13          A. I believe --

14          Q. Let me rephrase that question.

15                You did think that Mr. [REDACTED] was  
16      incorrect in the statements and documents that he  
17      quoted from in his report and -- and you disagree  
18      with him that those statements would be understood  
19      as benefiting chiefly investments, is that fair?

20                   MR. OPPENHEIMER: Objection;  
21      mischaracterizes.

22                You can answer.

23          A. My opinion as stated in this rebuttal  
24      report is that Mr. [REDACTED] characterization of  
25      Ripple's strategic behavior is not necessarily

1 supported by the quotation he provides. And that  
2 the -- there's such a strong, very strong,  
3 economic rationale for what Ripple has done along  
4 the way, that that would be the logical place to  
5 start. There's something known as Occam's razor,  
6 which is stick to this straightforward solution.  
7 It's probably the right one.

8 Q. Okay. Let me return to something I  
9 think you said earlier when you read the quote  
10 from Garlinghouse. And I'm going to give you the  
11 chance to tell me if I got this wrong.

12 But did you say that he was trying to  
13 reduce or eliminate uncertainty in the XRP market?  
14 Is that a term you used?

15 MR. OPPENHEIMER: Objection.

16 A. I used -- I did say reduce uncertainty.  
17 I don't remember the rest of exactly what I said.

18 Q. Okay. Do you believe he was trying to  
19 reduce uncertainty in the XRP market?

20 MR. OPPENHEIMER: Objection

21 to form.

22 A. Again, I am not here to opine on what  
23 Mr. Garlinghouse is thinking.

24 Q. Do you have an understanding of who  
25 would have been in the market to purchase XRP back

1 at the end of 2017?

2 A. Not precisely.

3 Q. All right. Just one of the exhibits we  
4 previously marked. If you could please look at  
5 Exhibit 6, the rebuttal report of [REDACTED]

6 A. All right.

7 MR. OPPENHEIMER: I'm sorry,  
8 I'm having an issue with the real  
9 time. Can we pause for a second? We  
10 don't have to go off the record.

11 MR. MOYE: As long as it  
12 doesn't hurt my time, sure.

13 MR. OPPENHEIMER: I'll give  
14 you back the minute if you need it.

15 MR. MOYE: Thank you.

16 (Pause)

17 BY MR. MOYE:

18 Q. All right. Please open the [REDACTED]  
19 rebuttal report to pages 8 and 9. Eight first and  
20 then we'll look at 9. I'm going to ask you a  
21 series of questions that are either quotes from or  
22 paraphrased from Mr. [REDACTED] report. I don't  
23 want to hide what I'm doing. It's in -- it's  
24 going to be in paragraphs B, C, and D on page 8  
25 and then we'll look at a couple on page 9. I'm

1 just going to ask you whether you agree or  
2 disagree with the statement I'm reading. Okay?  
3 And we're going to go through several.

4 First statement. Do you agree that "XRP  
5 is not a commonly accepted medium of exchange for  
6 the purpose of goods or services nor in processing  
7 payments for goods"?

8 MR. OPPENHEIMER: Objection.

9 You can answer.

10 A. I had clarified earlier that "commonly  
11 accepted" has no definition in the literature, so  
12 I couldn't say.

13 Q. Do you agree that "None of the largest  
14 retailers in the U.S. nor the major payment  
15 processors accept XRP as a medium of exchange"?

16 MR. OPPENHEIMER: Objection.

17 A. I would note that none of the largest  
18 retailers in the U.S. nor the major payment  
19 processors -- well, I couldn't know about that --  
20 have accepted euros as a medium of exchange  
21 either.

22 Q. Can you an -- can you answer the  
23 question?

24 A. I would like --

25 Q. Do you agree --

1           A.    -- to highlight that focusing on the  
2   U.S. as a benchmark for "commonly accepted," the  
3   term is not defined and the United States is  
4   certainly not the definition.

5           Q.    All right. Are you unwilling to answer  
6   the question I asked of whether --

7                       MS. PROSTKO: Objection.

8           Q.    -- whether you agree that none of the  
9   largest retailers in the U.S. nor the major  
10   payment processors accept XRP as a medium of  
11   exchange?

12                   MR. OPPENHEIMER: Objection  
13                   to the form.

14           A.    I think I've made clear that the  
15   statement is irrelevant.

16           Q.    So is that a no? You're not willing to  
17   answer the question?

18                   MR. OPPENHEIMER: Objection.

19           A.    I think that's putting words in my  
20   mouth. I said the statement is irrelevant.

21           Q.    Well, Professor Osler, you probably  
22   think most of my questions today were irrelevant.  
23   Yet you were a very good sport and you answered  
24   nearly all of them. We're really close to the end  
25   here. I can keep repeating, but I just -- a



1 yes-or-no answer would help us get through this.

2 Do you agree or disagree that none of  
3 the largest retailers in the U.S. nor the major  
4 payment processors accept XRP as a medium of  
5 exchange?

6 MR. OPPENHEIMER: Objection;  
7 asked and answered.

8 A. Noting that the matter is irrelevant to  
9 the nature of XRP one way or the other, I will say  
10 I agree with that.

11 Q. Okay. And that can be a standing  
12 objection for these questions if that would be  
13 helpful to you. I'm happy to make that part of  
14 the record.

15 Do you agree, Professor Osler, that "XRP  
16 is not generally used to quote the prices and  
17 values of goods and services"?

18 MR. OPPENHEIMER: Objection.

19 A. I have the same objection right from the  
20 start. "Generally accepted" is, first of all, not  
21 unanimously -- not defined. So the questions here  
22 are not relevant to whether XRP does or does not  
23 function, have these functions. And I -- so I  
24 disagree that the definition that it is required  
25 or that I disagree that there's any definition to

1 "generally accepted."

2 And I -- so I -- anyhow, these -- these  
3 matters here, I disagree with fundamentally the  
4 premise.

5 Q. Do you agree that "XRP is not used  
6 frequently or regularly to quote the" price of --  
7 "prices and values of goods and services"?

8 MR. OPPENHEIMER: Objection  
9 to form.

10 A. That is still undefined and it is still  
11 not relevant to the definition or the nature of a  
12 currency. As I've said, the -- the currency of  
13 the Seychelles, the Seychelles rupee, is a  
14 currency and there's less than a million people  
15 there. So this notion of generally accepted and  
16 that it has to be based on the United States for  
17 some reason has no foundation conceptually.

18 So it's -- it's just difficult for me to  
19 make head or tail of why this is here.

20 Q. Well, again, whether or not you think  
21 it's relevant, are you able to answer whether you  
22 agree or disagree whether XRP is frequently or  
23 regularly used to quote the prices and values of  
24 goods and services?

25 A. I cannot say because "frequently" is not

1 defined.

2 Q. Okay. Can you say one way or the other  
3 whether XRP is used in financial reporting?

4 A. I couldn't say.

5 Q. Can you say one way or the other  
6 whether, in Ripple's own quarterly XRP market  
7 reports, the amount of XRP that Ripple sells each  
8 quarter is quoted in US dollars, not in XRP?

9 MR. OPPENHEIMER: Objection.

10 A. I couldn't say that one way or the  
11 other.

12 Q. Have you seen any of Ripple's --

13 A. I have looked at them.

14 Q. -- XRP market reports?

15 A. To say that it does not function some --  
16 as something here does not imply that XRP does not  
17 serve that function somewhere else. So I have  
18 highlighted that XRP serves as a unit of account  
19 in the medium of exchange function that it serves  
20 in the payment service it provides, which is the  
21 goal of Ripple in terms of where it wants to head  
22 as a business model.

23 Q. Professor Osler, do you agree or  
24 disagree that XRP is at least 11 times more  
25 volatile -- that the price of XRP is at least 11

1 times more volatile than any of the top ten most  
2 traded fiat currencies in the world?

3 MR. OPPENHEIMER: Objection.

4 A. My own numbers don't go there to a  
5 number 11 or more, though I haven't particularly  
6 studied it.

7 Q. So does that mean you don't know or you  
8 disagree?

9 A. That means I couldn't say specifically.

10 Q. Okay. Let's turn over to page 9. These  
11 questions will be similar and they'll be drawn or  
12 paraphrased from --

13 A. If I could flush out my answer to that.

14 Q. You may.

15 A. As I highlighted earlier today, the --  
16 the standard deviation of XRP prices in that  
17 academic article which implies a .1 percent  
18 volatility at the one-minute horizon is five times  
19 the volatility of a dollar or euro at the  
20 one-minute horizon that I calculated.

21 So the number 11, it could well be  
22 lower; it could be higher. I -- my own evidence  
23 does not suggest that 11 is -- is -- suggests that  
24 11 is probably high.

25 Q. All right. I don't want to mislead you.

1 He was -- Professor [REDACTED] was not looking at the  
2 chart that I showed you earlier today. I believe  
3 he's referring to the chart on page 18 of this  
4 report. You are free to look at that if it helps  
5 you.

6 A. Okay. Well, this is daily to start  
7 with. And my numbers were for the one-minute  
8 horizon.

9 Q. Right.

10 A. So there's all this -- and -- and,  
11 again, daily is not relevant for the cross  
12 currency -- the remittance nondollar crosses that  
13 Ripple is focused on.

14 Q. So, again, is it that you disagree with  
15 him with the statement I read to you or that you  
16 can't say whether the statement is correct?

17 MR. OPPENHEIMER: Objection;  
18 asked and answered.

19 A. I would say that the data he provides  
20 are -- I would say there's a lot of ways to  
21 measure it. Okay? And this is one of them.

22 Q. Okay. Let's go over to page 9,  
23 paragraph F., right after the first mention of the  
24 bolivar.

25 Here's the question: Do you agree that

1 XRP is not designated legal tender nor government  
2 backed, like traditional fiat currencies?

3 A. I'm sorry, which statement within the  
4 paragraph?

5 Q. It's in the middle, starts "In  
6 contrast..."

7 A. Uh-huh. I do not disagree with that.

8 Q. Here's the next statement.

9 Do you agree that XRP -- that because  
10 XRP is not a fiat or government-backed currency --  
11 I'm sorry, let me scratch that.

12 Do you agree that because XRP is not  
13 designated as legal tender, that it is not  
14 required to be accepted as a medium of exchange?

15 MR. OPPENHEIMER: Objection  
16 to form.

17 A. Let me just think a little more. This  
18 is legal stuff and I feel like I'm out of my depth  
19 with legal -- you know --

20 Q. That's a fair caveat. I'm not asking  
21 for a legal explanation. Simply as an economist.

22 Do you believe that someone could hold  
23 XRP, bring them to a transaction, and say you  
24 really must accept this XRP in payment because I  
25 really want you to?

1 MR. OPPENHEIMER: Objection.

2 Q. Do you think you could compel someone to  
3 accept XRP in payment?

4 MR. OPPENHEIMER: Objection  
5 to form.

6 A. In general, one of the attractive things  
7 about cryptocurrencies is that they are used  
8 voluntarily.

9 Q. Okay. So do you agree or disagree that  
10 Venezuelans today commonly transact goods in more  
11 stable currencies than the bolivar like the US  
12 dollar?

13 A. I actually don't know.

14 Q. Okay. And do you agree or disagree that  
15 in 2020, the country of Venezuela actually  
16 legalized US dollar-based transactions?

17 MR. OPPENHEIMER: Objection.

18 You can answer.

19 A. I was not aware of it. Venezuela is --  
20 Venez -- using Venezuela misses the point. There  
21 are extremely volatile currencies such as the  
22 Turkish lira. In the 1990s, the Turkish lira was  
23 depreciating at 40 to 80 percent per year and it  
24 continued to be used. So substantial volatility  
25 in the value of a currency is consistent with it

1 being used as a currency.

2 Q. All right. Let's go to page 15. And,  
3 again, you can dis -- you can agree, you can  
4 disagree, you can say you don't know or I suppose  
5 you could object to my question.

6 But the question is, which is drawn from  
7 paragraph 20, do you agree that XRP is not  
8 commonly accepted as a medium of exchange by major  
9 credit card processors like Visa, MasterCard,  
10 American Express, et cetera?

11 MR. OPPENHEIMER: Objection.

12 A. I see that it's written here and I can't  
13 say that I looked at it directly myself.

14 Q. So you don't know?

15 A. So I am not aware one way or the other.

16 Q. Okay. And turning over to page 18 to  
17 the figure, the diagram that I -- I'm sorry, the  
18 chart that I referred you to before.

19 A. Uh-huh.

20 Q. Do you see that Professor [REDACTED] has  
21 constructed a graph showing daily return of  
22 volatility between August 6th, 2013 and December  
23 22nd, 2020, for a variety of fiat currencies  
24 versus XRP.

25 Do you see that?



1 A. I do.

2 Q. Okay. As an economist, if you had the  
3 appropriate data set, could you have created your  
4 own chart showing the volatility of XRP against  
5 other currencies for different periods of time?

6 A. Absolutely.

7 Q. Okay.

8 MR. MOYE: Let me consult  
9 with my colleague for a moment and  
10 that may be all the questions that I  
11 have for you.

12 THE VIDEOGRAPHER: All  
13 right. Going off the record at 6:03.

14 (Pause)

15 THE VIDEOGRAPHER: Okay.  
16 Back on the record, 6:05.

17 MR. MOYE: Thank you,  
18 Professor Osler. Those are all the  
19 questions I have for you today.

20 THE WITNESS: Okay. Thank  
21 you.

22 CROSS-EXAMINATION

23 BY MR. OPPENHEIMER:

24 Q. Professor Osler, I have just a few  
25 questions for you. You were asked some questions

1 about the materials cited in your port -- in your  
2 report and said -- I'll paraphrase a bit -- but  
3 essentially you included the materials that were  
4 critical to your opinion.

5 Do you recall that testimony?

6 A. I do. That was -- that was way at the  
7 beginning of the day, but, yes.

8 Q. Can you explain what you meant by  
9 materials that were critical to your opinion?

10 A. This is the information that -- it was  
11 an important fact that I used or it provided an  
12 important perspective that I used. So I  
13 considered it and I -- that it frame -- helped  
14 frame the opinion. It helped shape the opinion  
15 that I actually have.

16 Q. Are there any materials that helped  
17 shape your opinions that were not listed in the  
18 report?

19 A. I think we went -- found one place where  
20 I didn't cite something on a -- on a small item  
21 and, otherwise, I was doing my best to cite  
22 everything.

23 Q. So aside from that one instance, you're  
24 not aware of any places where there is material  
25 that influenced your opinion that was not cited in

1 the report, is that correct?

2 A. Correct.

3 Q. Okay. You were asked some questions  
4 about whether you had made efforts to essentially  
5 calculate what the costs of ODL transactions are.

6 Do you recall that set of questions?

7 A. I -- I recall that there was such a set,  
8 yes.

9 Q. Can you briefly summarize what your  
10 opinion about the cost of ODL is in this case?

11 A. Could you be more specific?

12 Q. Are you offering an opinion about the  
13 actual costs that have been historically paid by  
14 users of ODL?

15 A. No.

16 Q. Are you offering an opinion based on the  
17 economic theory behind the ODL product?

18 A. Yes. I'm offering an opinion based on  
19 the product properties of the ODL product.

20 Q. Can you explain what types of costs are  
21 typically present in a traditional cross-border  
22 payment transaction? Just the -- the categories  
23 of costs.

24 A. There are basic fees that the center  
25 pays to whatever the remittance service provider

1 is. And then there is the exchange, the currency  
2 exchange process that involves different exchange  
3 rates and it's different for that -- the paying of  
4 the bid versus the ask.

5 And then there are sometimes exchange  
6 fees. If you're going through a -- through a  
7 bank, there are no exchange fees, so that would  
8 not be -- that would not be relevant in that  
9 context. There would just be the -- the upfront  
10 fees.

11 Plus the bid/ask spread or spreads if  
12 it's going through a -- the dollars vehicle  
13 currency or a vehicle currency.

14 And then there would be sender fees as  
15 well. And exactly the balance of those varies  
16 quite widely from what I understand.

17 And so -- and then there's the  
18 transaction fee that can be -- and then there's  
19 the transaction fee.

20 Q. So if I could summarize or if you could  
21 tell me if I have this list right.

22 A. Uh-huh.

23 Q. You mentioned fees to the provider,  
24 exchange fees, bid/ask spreads, sender fees, and  
25 the transaction fee?

1 A. Uh-huh.

2 Q. Is that correct?

3 A. Yeah.

4 Q. And --

5 A. Well, so those are those costs. And  
6 then there's the time, which is huge. The -- the  
7 time for bank transactions -- well, the time in  
8 general is huge and this why the World Bank  
9 considers a five-day receipt to be relatively  
10 fast. Five days is considered by the World Bank  
11 to be relatively fast. So just putting it out  
12 there.

13 The -- the time of these transactions,  
14 which for banks can go up to ten days sometimes,  
15 is substantial and costly.

16 Q. So let me go through those categories  
17 now with respect to ODL.

18 Would ODL also have an -- a -- a bid/ask  
19 spread?

20 A. Yes.

21 MR. MOYE: Objection;  
22 foundation.

23 Q. Would ODL potentially face exchange  
24 fees?

25 MR. MOYE: Objection;

1 foundation.

2 A. I'm not certain about that because I  
3 don't think of ODL as an exchange.

4 Q. So it may or may not?

5 A. It may or may not.

6 Q. Does ODL have to involve sender fees?

7 MR. MOYE: Objection;

8 foundation.

9 A. The RSP, the remittance service  
10 provider, charges those.

11 Q. So would you expect to see them in an  
12 ODL transaction?

13 A. Yes. So those would be the same.

14 Q. And what about a transaction fee?

15 A. The transaction fee for ODL is trivially  
16 small and the time is very short.

17 Q. And what about fees to the remittance  
18 service provider? Would any be required for an  
19 ODL transaction?

20 A. You mean for the person bringing the  
21 funds in?

22 Q. I think one of the categories you  
23 mentioned was fees to the provider.

24 A. So I guess there's -- what I meant was  
25 there's the person coming in who pays a fee and

1       there's the person who takes the money out who  
2       pays the fee and that's where the balance of those  
3       fees varies.

4           Q.     I see.

5                   Can we call those sender and recipient  
6       fees?

7           A.     Yes.

8           Q.     Okay. I think we covered sender fees in  
9       the context of ODL.

10          A.     Uh-huh.

11          Q.     Would there necessarily be recipient  
12       fees in the context of ODL?

13                   MR. MOYE: Objection;  
14       foundation.

15          A.     Those are paid to the -- the recipi --  
16       remittance service provider.

17                   THE REPORTER: Repeat.

18                   THE WITNESS: Me or him?

19                   THE REPORTER: You.

20                   THE WITNESS: Me.

21          A.     The -- whatever we were talking about.

22          Q.     Provider fees.

23          A.     The -- the sender and recipient fees are  
24       both paid to the remittance service providers.

25          Q.     So as a matter of economic theory, is

1 the -- what -- what are the differences between  
2 the various fees for ODL transactions compared to  
3 traditional cross-border payment transactions?

4 A. So the remittance service provider fees  
5 at both ends will still happen. Bid/ask spread  
6 still happens. And then the transaction fees are  
7 lower. And I believe on -- I have not read  
8 anywhere about there being an ODL exchange fee.  
9 So that is -- that's all I can say. I believe  
10 that's not there, but I wouldn't know for sure.

11 And then the speed is much, much faster.  
12 The actual funds move in three to five seconds as  
13 opposed to, in a wholesale foreign exchange  
14 transaction, it's two days settlement, and then  
15 for remittance transactions through banks, as  
16 we've discussed, it's anywhere from a few days to  
17 ten days. And, in general, five days is  
18 considered fast.

19 MR. OPPENHEIMER: All right.

20 I think -- no further questions at  
21 this time.

22 MR. MOYE: I have no  
23 questions.

24 THE VIDEOGRAPHER: All  
25 right. So this concludes the video



1 deposition of Professor Carol Osler.

2 The time is 6:14 and we're going off  
3 the record.

4 (Whereupon, the deposition  
5 concluded at 6:14 p.m.)  
6  
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1 STATE OF NEW YORK )

2 ) ss:

3 COUNTY OF NEW YORK )

4 I hereby certify that the witness in the  
5 foregoing deposition, CAROL L. OSLER, Ph.D. was by me  
6 duly sworn to testify to the truth, the whole truth and  
7 nothing but the truth, in the within-entitled cause; that  
8 said deposition was taken at the time and place herein  
9 named; and that the deposition is a true record of the  
10 witness's testimony as reported by me, a duly certified  
11 shorthand reporter and a disinterested person, and was  
12 thereafter transcribed into typewriting by computer.

13 I further certify that I am not interested in  
14 the outcome of the said action, nor connected with nor  
15 related to any of the parties in said action, nor to  
16 their respective counsel.

17 IN WITNESS WHEREOF, I have hereunto set my hand  
18 this 23rd day of December, 2021.

19 Reading and Signing was:

20 \_\_\_ requested \_\_\_ waived \_X\_ not requested.

21  
22  
23 \_\_\_\_\_  
24 BRIDGET LOMBARDOZZI, CSR, RMR, CRR  
25

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[independently - jberg]

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**[jersey - lion's]**

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